FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 30—Number 34 AUGUST 23, 1958 1 Year $4, 2 Years $7

High-Fiber Feed For Poultry Gets Approval in N. C.

RALEIGH, N.C.—The North Carolina State Board of Agriculture has adopted a tentative regulation to permit the sale of special-purpose, high-fiber poultry feeds, according to a report from the North Carolina State Department of Agriculture.

Standards for the new poultry feeds, to be labeled as "high fiber pullet developer for layers," and "high fiber turkey developer for layers," set minimums of 9% on the protein and 2% on the fat content of the feeds, and a maximum of 20% on the fiber content. The standards were adopted for a period of one year beginning Sept. 1, 1958.

The temporary standards were granted at the request of the North Carolina Feed Manufacturers' Assn., whose president, Gil Brauch, Charlotte, pointed to recent experimental work indicating a number of advantages to poultry producers by lowering the protein and raising the fiber content of feed for laying hens.

"Experiments have shown," Mr. Brauch said, "that this type of feeding delays sexual maturity, resulting in larger eggs during the first four months of production. It is also 'self-restricting,' permitting poultrymen to keep feed troughs filled throughout the day, while at the same time eli-

(Turn to NORTH CAROLINA, page 87)

Honeggers' Reports Best Business Year In Company's History

FAIRBURY, ILL.—The best business year in the history of Honeggers' & Co., Inc., Fairbury, was completed on June 30, Sam R. Honegger, president and chairman of the board of the Illinois firm, announced.

He told stockholders at the recent annual meeting that the firm's "dollar volume is up and our profits have more than doubled."

Net dollar volume for 1958 was increased 7% over the previous year

(Turn to HONEGGERS', page 87)

Egg-Type Chick Hatch Up 13% in Seven Months

WASHINGTON — The booming late season increase in the 1958 chick hatch for flock replacements gained even more momentum during the month of July, according to the U.S. Department of Agriculture's latest hatchery report.

Production from January through July totaled 515,639,000—an increase of 13% over the same period in 1957. And the outlook for August as reported by the USDA also indicates a larger hatch of egg-type chicks than during August, 1957.

At the same time, the report showed that monthly turkey production, which was running behind last year through May and then was up 4% during June, moved ahead of July, 1957, with a 33% increase in the total hatch for the month.

The egg-type chick hatch for flock replacement, following a sharp upward trend which began in May, totaled 17,924,000 in July, compared with 11,877,000 in July, 1957. This is an increase of 51%. The total combined hatch of egg-type and broiler-type chicks set a record for the month.

Through April, hatchery production figures showed a cumulative increase in egg-type chicks of only 7% over 1957. But May hatchings jumped 23% over May, 1957, June egg-type hatchings were up 40% and now the July report shows a 51% increase.

This brings the cumulative total for the first seven months of the year to 13% more than the first seven months of the previous year. Indications were also given in the report that a large hatch can also be expected in August. The number of eggs for egg-type chicks in incubators Aug. 1 was 23% higher than the previous Aug. 1. All regions showed an increase in eggs in incubators within a range running from up 5% in New England to an increase of 45% in the west south central region.

(Turn to HATCH, page 87)

PL 480 Mandatory Barter Provisions Killed by House Committee Agreement

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—This week a conference committee of Congress meeting on extension of Public Law 480 reached an agreement, and in so doing killed the mandatory barter provision which was the one item of heated controversy. That provision was contained in the House version of the legislation.

It has been pointed out by government opponents of the mandatory barter provision that had it been adopted by requiring barter up to $500 million a year of U.S. agricultural surplus, that condition would have virtually eliminated the gains the private trade had previously obtained when it persuaded the government to adopt its subsidy-in-kind programs for grain exports. Under barter provisions of the law, exports were required to come directly from government stocks, and the buying power of a $500 million annual requirement would have dominated the markets, modifying price structure and perhaps imperiling ordinary trade.

The committee decision is construed as a big victory for Walter C. Berger, stabilization director of Commodity Stabilization Service, who fought the mandatory barter almost

(Turn to PL 480, page 87)

Market Effect of Farm Bill Examined

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Passage of new farm legislation has aroused inquiries among feed industry officials over the possibility of changes which might be effected in the marketing and production pattern of corn for the 1959 crop due to the changes which will occur under the new price support pattern.

Consensus representing a relatively small sample, indicates that generally there will be only minor changes in the over-all acreage for all feed grains.

The new law will increase the level of support for corn in the old non-commercial area by upwards of 10¢ bu., but will reduce the support level for the old commercial corn area by more than 20¢ bu. from the level prevailing this year.

U.S. Department of Agriculture officials comment that any acreage adjustments that might occur will balance and eliminate any marked production pattern.

Reliable trade sources believe that there should be no radical change in the marketing pattern, but they do anticipate that the ultimate effect will provoke a long, slow increase in corn production in the previous deficit areas such as California and the Southeast.

They comment, however, that this pattern had already been displaying evidence of this trend and would have taken place in any event. Now, however, they see a normal economic pattern slowly accelerated.

Discourages Expansion

Another influence which is probably not too clearly discerned by industry is the fact that lower levels of price support for farm crops tend to discourage availability of capital for production expansion. For example, it is expected in official circles that banks will be reluctant to make loans for capital equipment, machinery and even plant foods on as liberal a scale as they have previously when price support levels were higher.

This influence of slowing down capital outlays will be a slow-moving influence, but it is one that has a sure effect in the long pull, it is noted.

Another intangible, yet-to-be-disclosed fact is the probable price sup-

(Turn to FARM LAW, page 91)

FEEDSTUFFS *Features This Week*

FEED RESEARCH: The importance of translating research findings into practical feed formulas is pointed out on **page 18** by Dr. E. I. Robertson in the third of a series of "Golden Year" features.

NUTRITION: Research papers presented at the recent Poultry Science Assn. meeting are reviewed on **page 10.**

MERCHANDISING: How an Iowa firm met a trend toward complete feeds for swine is outlined on **page 42.**

ENZYMES: Questions and answers on enzymes in poultry rations containing barley are given on **page 66.**

BATCH PROPORTIONING: The general subject of batch proportioning with special attention to automatic control systems is discussed on **page 76.**

— REGULAR FEATURES —

Putting Research to Work	28	Feedstuffs Index for July	62
Convention Calendar	34	Joe Brooks	68
Worth Looking Into	58	Feed Markets in Detail	88

New Tranquilizer Now Available for Beef Cattle Feeding

NEW YORK—Tran-Q, a new animal feed additive of the tranquilizer family, is now available for use in feeding beef cattle, Chas. Pfizer & Co., Inc., announced this week.

Use of the new growth stimulant in feeding cattle will require supplemental new drug applications for feed manufacturers, the company reported. Pfizer will assist in processing these supplemental applications for feed manufacturers incorporating Tran-Q in their beef cattle feeds. The product will be made available to manufacturers as a premix containing 1 gm. of hydroxyzine hydrochloride per pound.

Average cost of feeding Tran-Q at recommended levels is 25¢ per steer for a 100-day feeding period, according to Pfizer spokesmen.

The announcement said several years of extensive research trials, which were initiated at Pfizer's agricultural research center, Terre Haute, Ind., have proved the material to

(Turn to TRANQUILIZER, page 87)

FEEDSTUFFS

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2501 WAYZATA BLVD., MINNEAPOLIS, MINN.
(Address Mail to P. O. Box 67, Minneapolis 40, Minn.
(Telephone: FRanklin 4-5200. All Offices Serviced by Bell System Teletype)

EDITORIAL STAFF—George L. Gates, Editor; Roger Berglund, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants; Duane F. McKenzie, Research Director.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald G. Neth, Secretary; T. A. Gaden, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard L. Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1005 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 20¢. Subscription rates: One year $4, two years $7, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the southeastern states

The New Farm Law

PASSAGE OF THE FARM LAW this week was no small feat when one considers the well-entrenched opposition in Congress to changes in concepts of farm legislation which have proved to be outdated. The changes embodied in the new law can be considered a victory for Secretary Benson and the administration, and it is a tribute to the Secretary's determination and political ability that the measure finally was passed.

Strength of the administration forces had been badly underestimated by many political observers. (Justifiable pride prompts Feedstuffs to note that its Washington correspondent stuck to his prediction that a new bill would be enacted at the current session of Congress while practically all other analysts wrote off that possibility as highly improbable or impossible. The able Mr. Cipperly proved himself again to be the reporter who knows what's going on.)

The ramifications of changes that will be brought about in price support methods under the new law will keep students of agriculture and markets busy for some time to come. Meanwhile, knowledge that progress is being made in achieving sounder economic principles in farm legislation is cheering all of those who have recognized the folly of support programs that built unwieldy surpluses, produced production controls that didn't control and ran up a huge tab for taxpayers.

ACTUALLY, SOME CHANGE in direction for federal farm programs has been expected by many of those who have thought most about farm problems. The surprise element evolves mainly because changes are arriving sooner than many had expected.

Among those who recently have expressed thoughts on the subject is Dr. G. E. Brandow, agricultural economist from Pennsylvania State College. At a gathering of economists last week in Pullman, Wash., Dr. Brandow predicted a trend toward free markets and away from government-administered support prices and production controls. Two factors, he noted, are responsible for this swing: (1) Ineffectiveness and high cost of old farm programs, and (2) Changing public attitude toward agriculture.

"Defense and satellites have increased demands on the Treasury and have downgraded the claims of farm programs for budget dollars. The farm problem is getting to be an old story, and the public tires of it. The dawn of the space age and the Middle East crisis has turned public attention to graver and more dramatic affairs within the past year," Dr. Brandow said.

The economist also pointed out that industrialization of the South is helping to influence the direction of farm policy. Interest of southern legislators in lower price and large volume of cotton, of course, has been a factor in the recent congressional struggles over the farm bill.

As the agricultural economy moves more toward the goal of producing for consumption rather than government storehouses, there undoubtedly will be greater opportunities for further development of markets for the products of animal agriculture, the real mainstay in the farm economy.

Next Big Change

REGARDLESS OF CHANGES IN LAWS, changes in farming methods will continue to be made as soon as practicability is proved and economic considerations permit them to be made.

A forecast of the next great change in American agriculture has been advanced by Earl D. Anderson, University of Maryland professor and president of the American Society of Agricultural Engineers. It will be, he says, complete mechanization and precision control of nearly all farmstead operations.

This change, Prof. Anderson says, will involve mechanization of farm chores and materials handling, provision for proper environmental conditions for livestock and storing and processing crops for a marketing profit. "The electric motor will play as important a role in this revolution as did the internal combustion engine in changing crop production methods," he says. "Today, over 90% of America's farms are electrified."

Of these developments, mechanization of farm chores is probably the most important, Prof. Anderson says. The farmer who steps down from his tractor equipped with finger-tip controls is loath to feed his cattle with a bushel basket. Engineers have developed for his use mechanical silo unloaders and feed distribution systems, mechanical gutter cleaners, pipelines and bulk tanks for handling milk and water.

PROVIDING PROPER environmental conditions for livestock production, most evident among swine and poultry producers now, will mean more buildings that will permit production planning independent of the weather.

The contributions the feed industry itself is making toward changes in farming methods and results will be meshing gears even more closely in the future with the wheels of farm mechanization.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

The nation's formula feed business continued slow this week. A slight pickup in sales noted in the Southwest and Northwest was offset by declines in the Northeast and other areas. Areas showing improvement indicated that dealers' inventories apparently are depleted and demand is now beginning to show at feed mills. Turkey feeds are moving in good volume. Broiler feeds have slowed, and the seasonal increase in cattle feed appears to be retarded by good pastures. The feed price index was 81.9, compared with 84.4 a week earlier and 78.7 a year earlier. The feed grain index was 71.1 compared with 71.3 the previous week and 71.4 the same week a year earlier. (Ingredient price details on pages 88-90.)

Northwest

Formula feed sales were very slightly improved this week over a week ago, but were still down seasonally throughout the area. Feed mill representatives said reports from their dealers indicate that harvesting has kept farmers out of feed stores for several days.

A slight pickup in dairy business was noted as pastures began to dry and turkey, hog and broiler feeds appeared to be holding their own, although volume in all of them has been reduced somewhat.

Running time varied among mills from one shift to three shifts for a full five-day week. All mills reported relatively slim backlogs. Despite the slim backlogs, however, one mill reported its business off only 10% from a record July.

Lower ingredient prices continued during the week. Soybean meal gained, but other high proteins were down enough to cut high protein feed price lists for next week by as much as $2. Low protein feeds will be down about $1.

Southwest

Formula feed business this week has picked up slightly for some manufacturers and is about unchanged for others.

The average pace is not so rushing as it was during July and early August, but most mills will put in five days, two shifts, and an occasional mill will run Saturday. Order backlogs range from practically none to two and three days.

Mill sales managers who report a slight upturn in business said they believe that dealers have depleted their inventories, after having stocked up heavily in July, and are now starting to order feed to meet good consumer demand. Consumer demand for broiler feed is off because of reduced placements, and there is some feeling that prices worked so high that consumer demand for most other feeds has suffered because of it. But the over-all outlook is regarded as good by most people because of the number of animals to be fed. A September upturn is expected.

Turkey feeds are one of the leading items now, as the birds grow larger and develop heartier appetites. Egg laying rations and grower and pullet feeds are in pretty good demand in some cases. Hog feeds are not generally moving with the urgency that was typical the past several months, but for this time of year the volume is considered good. There is no big pick-up in cattle feed movement yet, probably because pastures are in such excellent condition.

Price lists will be generally unchanged to down $1.50. Lower millfeed, grain and animal protein prices in some instances are being offset by higher soybean meal values.

Northeast

There was some tapering off in formula feed sales after the good turnover in the last 10 days. But the action of the market indicated that the buying tempo is likely to resume after the first of the week.

Sales were concentrated chiefly in egg mashes, turkey feeds and growing feeds. But dairy demand has held up rather well for this time of year.

Egg prices continued steady. But broilers are down to a level where growers are hard pressed to make a profit. Prices in the East didn't average over 18¢ lb.

Some ingredients continued to give ground, but as a whole the market's action wasn't considered too bad.

Soybean oil meal has shown some rallying power after its recent severe drop. Prices were off $2 to $3 for the week, but they gathered enough strength to regain $1.50 of an earlier greater loss.

Cottonseed oil meal declined $3 and linseed oil meal was off $1. Meat scraps continued weak and were down $5. Fish meal was quite strong and in very limited supply.

Millfeed prices worked lower under lack of demand.

Running time of formula feed manufacturers averaged 40 hours last week.

Southeast

Feed business has remained about unchanged this week. Excellent pastures in most sections held dairy feeding down and declining prices of cattle and hogs tended to slow these types of feeds.

Broiler chick placements have continued the downward trend, and for the last reporting period were below 6 million for the first time in many weeks. This is also 1% less than were placed during the same period last year. This is an encouraging factor, according to most of the trade, since the broiler market is now at 17¢ f.o.b. farms. Much lower prices have been predicted but may not be seen if the decrease in baby chicks continues into the fall months.

Feed prices have declined for the most part this week, helping the feeder who is fighting lower feed ratios. Demand for most feed ingre-

(Turn to MARKETS, page 92)

put your
confidence in

PETER HAND VITAMIN A

consistently
superior performance

under varying conditions

Peter Hand

Claims and counter claims by suppliers of Vitamin A do not make a superior product. What your customers expect of the Vitamin A in your feeds is that it will be readily assimilated by their animals... and that the vitamin potency will be retained during storage, under varying heat, humidity and mineral conditions.

availability *Continuing research proves that no real difference can be said to exist in the availability of major, commercially accepted Vitamin A Products. However, Peter Hand Vitamin A is above the average line of response more often than any other. (Test #A1-58C)* The important difference in Vitamin A products is in their stability.*

stability *Exhaustive tests under varying conditions prove the consistently superior stability of Peter Hand Vitamin A...*

- In PELLETED FEEDS (Test #L-53-54-2)*
- In MASHES (Test #L-53-54-1)*
- In VITAMIN PREMIXES (Test #A-4-54)*
- In MINERAL BLENDS (Test #L-54-40)*
- In WATER (Test #L-54-37)*

PETER HAND VITAMIN A in beadlet form is available in a wide variety of potencies, from 5,000 U.S.P. units to 250,000 U.S.P. units per gram.

PETER HAND FOUNDATION

Division of Peter Hand Brewery Co.

1000 North Avenue, Chicago 22, Illinois

also superior quality custom premixes blended to your exacting specifications

© 1958 P. H. B. Co.

**For complete details and information* on results and conditions of testing please mail this coupon.

Dept. F-8-23

Peter Hand Foundation,
1000 North Ave., Chicago 22, Illinois

Please send me complete testing details, plus full data and recommended usage on Peter Hand Vitamin A

Name_____ Title_____

Company Name_____

Address_____

City_____ Zone____ State_____

Program for Iowa Meeting Outlined

DES MOINES—The program for the annual convention of the Western Grain & Feed Assn. of Iowa has been announced by the program committee, according to Bob Skinner, executive secretary of the association.

Subjects to be covered include: how to operate a grain bank; effective selling; contract farming; futures market and hedging; aeration, fumigation and drying of grain, and the readjustment in agriculture.

The convention will be held Nov. 23-25 at the Hotel Fort Des Moines here.

Members of the program committee are C. D. Whitaker, Swift & Co., Des Moines, chairman; John Lynch, Sargent Grain Co., Des Moines; E. L. Dutcher, Farmers Supply Co., Ankeny; Gary Severson, Vy-Lactos Laboratories, Inc., Des Moines, and Eldon Hurley, Bates-Couch Terminal Elevator, West Des Moines.

Allied Mills to Move Offices to New Site

CHICAGO—The general offices of Allied Mills, Inc., Chicago, manufacturer of Wayne Feeds, will be moved from 3400 Board of Trade to the new Morton Salt building at 110 North Wacker Drive as of Aug. 28, it has been announced by E. W. Lenz, president of Allied Mills.

Mr. Lenz said that after 28 years in the Board of Trade building, additional space was needed. The new location provides larger, more modern and conveniently located quarters immediately north of Chicago's Civic Opera building.

The Morton Salt building was completed only recently. Allied Mills, Inc., is one of the first occupants. The office will be on the third floor, and its new phone number is FInancial 6-5060.

Mr. Lenz also announced that Harris Lyon, formerly plant manager at Peoria, Ill., and John Richardson, previously director of advertising and sales promotion at Fort Wayne, Ind., will now headquarter at Chicago. Mr. Lyon has been named a member of the production department and Mr. Richardson is general marketing and promotion manager, a newly created position.

Minnesota Swine Day To Be Held Sept. 11

ST. PAUL, MINN. — Research experiments involving some 1,500 University of Minnesota hogs will be reported at the Minnesota Swine Feeders Day to be held Sept. 11 on the St. Paul campus of the university.

Research topics to be discussed include antibiotics and other feed additives for growing and finishing swine, thyroid-active compounds for sows during the milking period, use of injectable iron in preventing nutritional anemia, influence of different protein levels on rates of gain, efficiency and carcass quality and protein supplements for barley rations fed to pigs.

Other reports will cover the university's swine breeding research, the Minnesota swine evaluation program and the past, present and future in swine production.

Dr. L. E. Hanson, head of the animal husbandry department at Minnesota, is program chairman. Staff members from the St. Paul campus and branch experiment stations at Grand Rapids, Crookston, Morris and Waseca will report on the experiments.

On page 34 of this issue of Feedstuffs, the date for the meeting was inadvertently listed as Sept. 1 rather than Sept. 11, the correct date.

FEED SALES IN WISCONSIN—1956-1957
Net Retail Feed Sales—1956-1957

Feed:	Tons 1956	Tons 1957	% of Total 1957
Total sales	1,048,708	1,051,365	....
Mixed feeds	700,924	660,124	62.79
Poultry feeds total	314,607	266,876	25.38
Broiler complete	40,308	39,842	3.74
Broiler concentrates	8,449	7,615	0.71
Turkey complete	19,148	15,176	1.44
Turkey concentrates	10,703	9,537	0.97
Other poultry complete	168,116	124,247	11.82
Other poultry concentrates	67,883	70,459	6.70
Dairy feeds total	198,800	195,258	18.57
20% protein and under	127,129	127,024	12.08
Over 20% protein	71,671	68,234	6.49
Pig and hog feeds total	79,959	90,007	8.56
25% protein and under	21,819	24,015	2.28
Over 25% protein	58,140	65,992	6.27
Beef feeds total	13,498	13,307	1.26
25% protein and under	8,012	6,563	0.62
Over 25% protein	5,486	6,744	0.64
Calf feeds	18,110	19,059	1.81
Dog feeds	22,996	24,657	2.34
Ground grain mixtures	6,833	5,103	0.48
Mineral feeds	13,945	15,127	1.44
All other mixed feeds	32,176	30,730	2.93
Protein feeds	177,473	213,584	20.32
Soybean meal	41,018	50,066	4.76
Malt spr., dr. grains	41,076	61,298	5.83
Corn gluten feed and meal	6,506	7,272	0.69
Meat scraps and tankage	17,168	26,277	2.50
Linseed meal	61,192	64,650	6.15
Dairy by-products	4,980	1,304	0.12
Cottonseed meal	2,554	1,435	0.13
All others	2,979	1,282	0.12
Low protein feeds	123,379	124,202	11.82
Wheat mill feeds	106,520	104,902	9.98
Corn mill feeds	148	.....	....
Alfalfa products	4,126	3,201	0.30
Oat mill feeds	1,558	4,931	0.47
All others	11,027	11,168	1.06
Unclassified	46,932	53,457	5.08
Molasses	31,888	32,688	3.11
Phosphorus supplements	2,569	2,222	0.21
Iodized salt	3,450	10,029	0.95
Ground limestone	9,025	8,518	0.81

Wisconsin '57 Formula Feed Usage Drops; Protein Feed Sales Increase

MADISON, WIS.—A total of 1,051,365 tons of feed was sold in Wisconsin during 1957, W. B. Griem, head of the feeds and fertilizer section of the Wisconsin Department of Agriculture, reports.

He said this represents a gain of 3,000 tons over the volume sold in 1956.

An interesting factor in these feed purchases, Mr. Griem said, was the change in kinds of feeds used. Formula feeds dropped from 700,000 tons used in 1956 to 660,000 tons in 1957. At the same time, protein feed was climbing in totals used.

In 1956, farmers bought 177,000 tons of protein feeds. In 1957, the total had increased to 213,000 tons, an increase of 17%. Usage of low protein and unclassified feeds, however, remained fairly constant.

In the mixed feeds category, a sharp drop was noted in the use of poultry feeds with 266,000 tons used in 1957, compared to 314,000 tons for 1956. Purchases of laying mash in 1957 amounted to 124,000 tons, compared to 168,000 tons the year before. Feed tonnage going for broiler and turkey raising dropped slightly in 1957.

A notable increase in the amount of hog feeds bought was reported, with 90,000 tons used in 1957, compared to 79,000 tons in 1956.

An interesting note on dairy feeds, Mr. Griem said, is that despite Wisconsin's fame as a dairy state where 650,000 calves are raised annually, purchases of commercial calf feed—19,000 tons—were less than the purchases of commercial dog food, which totaled 24,000 tons.

He also reported growing interest in bulk delivery of feeds, portable mills and medicated feeds.

Here is a breakdown of feed sales by types of feeds:

WHOLESALE FEEDS USED BY WISCONSIN MANUFACTURERS IN MIXED FEEDS—1957

Feed:	Tons:
Total	277,760
Mixed feeds	10,477
Mineral feeds	969
Beef supplements	31
Dairy supplements	1,370
Hog supplements	1,051
Broiler supplements	192
Turkey supplements	1,135
Other poultry supplements	5,929
Protein feeds	145,047
Corn gluten feed and meal	6,441
Cottonseed meal	2,643
Linseed meal	20,599
Soybean meal	81,999
Malt spr., dr. grains	8,133
Meat scraps and tankage	21,095
Dairy by-products	1,939
All others	2,198
Low protein feeds	79,529
Wheat mill feeds	34,542
Corn mill feeds	2,889
Oat mill feeds	9,588
Alfalfa products	18,817
Screenings	11,495
All others	2,198
Unclassified	42,507
Iodized salt	2,969
Phosphorus supplements	11,986
Ground limestone	14,359
Molasses	11,989
All others	1,204
Total used 1954	316,309
Total used 1955	289,487
Total used 1956	305,172
Total used 1957	272,718

New Missouri Mill Plans Open House

DEXTER, MO. — The newly-completed Monarch Feed Mills here will hold open house events Aug. 28 and Aug. 30 to celebrate the opening of the new facility.

A program for 228 dealers is set Aug. 28, when a noon luncheon is planned with Dr. J. M. Ragsdale, University of Missouri agricultural economist, and Lewis Peggs, executive vice president of National Stock Yards, as speakers. Guests will be the firm's dealers in southeast Missouri and northeast Arkansas.

Open house for the general public will be Aug. 30. Planned are refreshments, tours of the mill, entertainment for children and other events.

Broiler Placement Cutback Continues; Delmarva Prices Hold

SALISBURY, MD.—Broiler prices held their own last week in Delmarva. The average price paid on the farm was 18.7¢ compared to 18.6¢ the week before. A year ago, however, the price was 21.8¢.

Delmarva growers sent 3,869,000 broilers to market last week. This was only 1% less than the previous week but 16% more than the corresponding week of 1957.

Across the nation, the egg set and chicken placement last week was cut back again. There has been a trend recently of cutting back week after week. Hatcherymen in 22 reporting states set 39,521,000 eggs last week. This was 4% less than the previous week but 11% above the corresponding week a year ago. Decreases in the number of eggs set from the previous week were reported in all but four of the 22 states. Sharpest declines occurred in Georgia, Arkansas, and Maine.

Broiler growers across the nation placed 30,526,000 chicks, 2% less than the previous week but 15% above the corresponding week a year ago. Sixteen of the 22 states reported lower placements compared to the previous week.

Research Finding Made in Turkey Hemorrhage Study

ST. PAUL, MINN. — Aortic ruptures in growing turkeys have been produced experimentally by two University of Minnesota researchers.

Dr. Paul E. Waibel, poultry nutritionist, and Dr. B. S. Pomeroy, veterinary scientist, reported the finding recently. The announcement of their finding said it should now be possible to speed up studies on control and prevention of the condition. It was extremely difficult to study previously because scientists were unable to produce it in the laboratory.

Dr. Waibel and Dr. Pomeroy produced aortic rupture in turkeys 10-15 weeks of age by feeding a chemical called beta aminopropionitrile (BAPN). They said the resulting hemorrhage was indistinguishable from that seen in field conditions.

Recent research at the University of Wisconsin showed that BAPN produces similar hemorrhages in turkeys just a few weeks old. The Minnesota tests, however, were the first to be conducted on older birds.

Aortic rupture occurs when one of the large blood vessels near the kidney breaks. The resulting hemorrhage always kills the bird. Many turkey flocks have been hit by the disease in recent years, often with heavy losses.

Cause of the condition is not known, the two researchers said, but they pointed out that their newly-discovered research technique should help yield some important clues.

Program Announced For Ohio Swine Day

WOOSTER, OHIO—Current developments in hog management and feeding will be outlined for Ohio hog farmers at Swine Day scheduled Sept. 5 at the Ohio Agricultural Experiment Station, Wooster.

Dr. L. L. Rummell, station director, said that in addition to research information, panel discussions will be on the program. The panel, composed of hog farmers and scientists, will cover the subjects of multiple farrowing and transmissible gastroenteritis.

Research discussions will include a report on differences in barrows and gilts in relation to carcass characteristics. Wilbur Bruner and Dr. Vern Cahill of the experiment station staff will discuss these studies.

Other topics on the program include feed additives for pigs on deep litter and on concrete, different levels of phosphorus for pigs in dry lot, the effect of low-level stilbestrol implants on barrows, pelleted feed and hygromycin and piperazine phosphate for worming.

Commercial and educational exhibits will be set up, and a tour of the station's flower gardens and experimental forest will be made by women attending.

The Swine Day activities will be held at the W. L. Robison swine research center six miles east of Wooster.

DAIRY COWS DECREASE

CORVALLIS, ORE. — The number of milk cows on Oregon farms has dropped to the lowest point on record and milk production continues a downward trend, reports Oregon State College extension service. Oregon has 178,000 milk cows this summer, a 2½% drop from last year and the smallest number in 23 years of record.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

Because the poultry feed lacked **SMALL'S Dehydrated Alfalfa**

she wonders where the yellow went . . .

It's "no sale" when today's housewife picks up a fryer with a bleached white color, for she knows that golden yellow is her clue to quality in poultry.

The pigments in feed that produce "the golden look" are known as **XANTHOPHYLLS.** Small's Dehydrated Alfalfa offers this vital pigment in an economical form that's easy to incorporate into your poultry feed formula. Also included in Small's Dehydrated Alfalfa are dozens of other valuable constitutents—including high quality protein, essential vitamins and minerals, and unidentified growth factors.

Xanthophylls come as part of the package—at no extra cost—when you buy Small's Dehydrated Alfalfa . . . just one more reason why it continues to be the first choice of experienced feed buyers.

ARCHER-DANIELS-MIDLAND COMPANY

Alfalfa Division

P. O. Box 356 **Kansas City 41, Mo.**

Management, Research Talks Given At Wisconsin Meeting

By JAMES H. ROSS
Feedstuffs Staff

MADISON, WIS.—Latest research findings by prominent nutritionists, some views on integrated feeding programs, a discussion of quality control and a series of talks on feeding management highlighted the program at the ninth Wisconsin Nutrition Conference this week in Madison.

Some 270 feed men and others from allied industries attended the two-day conference at the University of Wisconsin Memorial Union. It was sponsored by the University of Wisconsin and the Central Retail Feed Assn.

Dr. R. H. Grummer, chairman of the university department of animal husbandry, was the general conference chairman.

Research Reports

A discussion of the possibility of improving poultry feed utilization by adding enzymes to feed was presented by Dr. H. R. Bird, chairman of the poultry husbandry department, University of Wisconsin. Results of research on minerals in feed were presented by Dr. N. N. Allen, Wisconsin dairy husbandry department; Dr. L. C. Norris, poultry husbandry department, Cornell University, and Dr. W. M. Beeson, department of animal husbandry, Purdue University.

The address on quality control in feed manufacturing was given by Dr. W. W. Cravens, McMillen Feed Mills, Decatur, Ind. Dr. E. E. Bartley, Kansas State College, discussed "Antibiotics for Dairy Cattle."

Integration—I. S. Riggs

An emphatic endorsemnt of integrated feeding programs was presented in the opening address by I. S. Riggs, chairman of the board of the American Feed Manufacturers Assn. and vice president of the Quaker Oats Co.

"Teamwork in production and marketing," he declared, "is the answer to agriculture's number one problem —the problem of falling farm income in the face of rising costs. Animal agriculture can obtain a larger and more profitable share of the housewife's total budget by catering to demands for higher quality foods, at a more attractive price, more conveniently and attractively packaged.

"Producing to specifications does not mean that a farmer must lose his independence—except perhaps his independence to produce and sell low quality products, thereby digging himself deeper and deeper into the hole." He pointed out that specifications are actually "written" by the housewife, who today is spending 55% of her food dollar for meat, milk and eggs.

The AFMA head commented that the market for high-protein foods can be greatly expanded by up-grading the types of food which people eat, by improving quality and nutritional content, and by providing for the built-in kitchen and maid services which the housewife demands today.

Of production-marketing agreements, Mr. Riggs said there is "a lot of room for consideration as to just what sort of methods will work best, but no room at all for feeling that coordinated methods will not work." He said the question becomes not whether contract farming is good or bad, but whether a specific contract is good or bad.

More Meat Consumption

Mr. Riggs predicted that total meat consumption can be raised, through teamwork, and by producing to specifications, from the present 165 lb. per capita to 200 lb. He cited a Purdue study that consumers would buy 7% more pork at the same price if it were of the meat type variety. He pointed out that broiler growers today can make better profits on a 19¢ market, because of production and marketing economies, than they formerly could make on a 22¢ market. He added that many producers in Iowa are producing eggs according to specifications at 4-6¢ per dozen over the Iowa grade A price.

"The feed dealer and feed manufacturer are in a position to take the lead in working out production and marketing arrangements involving themselves, farmers and processors," Mr. Riggs said. He surmised that feed men might serve mainly as a spark plug in getting other factions together in a mutual effort toward better efficiency and quality.

"It is possible that all the functions of production, processing and marketing might be performed by a feed dealer or manufacturer," the AFMA chairman said. "On the other hand, he might serve as only one of the links in performing one of those functions.

"The farmer-producer may give up his responsibility for some of the overall management decisions. In return, he would receive some security of market and income, either in the form of outright income guarantees or through price premium provisions for a given period. He may or may not receive credit or financing as part of the 'package.' The feed industry may, or again it may not, assume added management responsibility."

In his concluding remarks Mr. Riggs said he hoped that any production and marketing agreements in the poultry or livestock industry would be in the nature of coordinated production and marketing agreements, without guarantees except of market outlets and quality premiums when they are earned by performance.

Research Review

In the next address a review of the progress of nutritional research at the Wisconsin Experiment Station was provided by Dr. Paul H. Phillips, department of biochemistry at the university. Setting the stage for the presentation of following talks on latest research findings, Dr. Phillips' discussion traced the gradual development of several phases of animal nutrition — minerals, vitamins and protein and amino acids.

Services for Feed Men

Another speaker appearing on the first-session program described the services of the University of Wisconsin which are of practical day-to-day value to the feed man, and urged the feed men in the audience to take advantage of the services.

James V. Dougherty, H. H. Van Dorden & Sons Co., Black River Falls, Wis., said that often, when a new feed ingredient appears on the market, he has found it a good practice to check with the university, or an independent nutritionist, before incorporating such an ingredient into his company's feed. He said that it pays to be certain that a new ingredient represents a real value for his customers, that it is something which can increase production and provide more efficiency for the producers.

"Personally, I feel that this service will be of increasing value to us, because new ideas and developments in feeding and management seem to be coming faster all the time. I believe that those who merchandise new ingredients for feeds would do well to come to the university, present their facts and let the staff make an appraisal. It could save a great deal of time and money," he said.

The speaker presented several examples of how the university has helped him iron out management problems. In one case his feed was being erroneously blamed for losses in a laying flock, and in another case, he was advised on how to alter his feed formulation to correct a vitamin deficiency in another flock.

"We in the feed business are in an excellent position to assist the university in reaching the farmer, and the university can help us increase our knowledge and generally improve our business," Mr. Dougherty explained.

Increasing Business

He also discussed ways the feed man can increase his business. "I think if we will look at the farmers, who come into our place of business, we will find that quite a few of them are ingredient feeders. Very often they will take a few hundred pounds of linseed meal or millfeeds, and add nothing else to their ration. Our biggest opportunity to increase our sales is not by cutting prices, or trying to take business from somebody else, but rather by doing a good educational job on this type of farmer,

(Turn to WISCONSIN, page 92)

CSC Suit Alleges Patent Infringement

NEW YORK — Commercial Solvents Corp. reported it has filed suit in Federal Court, eastern district of Iowa, against Grain Processing Corp. charging violation of Commercial Solvents' Patent No. 2,809,892.

Patent No. 2,809,892 was issued to Commercial Solvents Corp. on Oct. 15, 1957, for the manufacture and sale of zinc bacitracin feed supplement. This product is marketed by CSC under the trade name of Baciferm®.

Chicks for Supply Up 82%

WASHINGTON—A continued sharp increase in the indicated placement of pullet chicks for broiler hatchery supply flocks during July by 10 of the largest primary breeders of broiler replacement stock has been reported by the U.S. Department of Agriculture.

The 3,054,000 chicks reported represent an increase of 82% more than in July, 1957. This follows a June increase of 65% over the previous June, and it brings the pullet chick placements by the 10 breeders during the first seven months of the year to 20,757,000—29% more than during the same period of 1957. (See table.)

The primary breeders included in this report account for a very large percentage of total supply of replacement pullets for broiler hatchery supply flocks. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before pullets actually come into the flocks.

Totals listed in the report include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month. The conversion from eggs to expected pullet chicks was made on the basis of 125 pullet chicks per case of hatching eggs sold.

Pullet Chicks* Placements for Broiler Hatchery Supply Flocks
(Reported by 10 leading breeders)

Month	1956 1,000 chicks	1957 1,000 chicks	1958 1,000 chicks	1958 as percent of 1957 Percent
January	1,912	1,886	1,982	105
February	2,187	1,997	2,270	114
March	2,866	2,538	3,118	123
April	2,996	3,033	3,320	109
May	2,854	2,899	3,623	125
June	2,298	2,060	3,390	165
July	1,778	1,676	3,054	182
August	1,884	1,410	....	...
September	1,864	1,935	....	...
October	1,922	2,297	....	...
November	1,900	1,926	....	...
December	1,787	2,238	....	...
Annual total	26,248	25,895	....	...

*Includes expected pullet replacements from eggs sold during the preceding month at the rate of 125 pullet chicks per case of eggs.

Pennsylvania Feed, Miller Group Plans 80th Convention

EPHRATA, PA. — Addresses concerning the future of agriculture, feed mill management and salesmanship will constitute the program at the 80th annual "room for improvement" convention of the Pennsylvania Millers & Feed Dealers Assn.

The convention is scheduled for Sept. 25-27 at the Penn-Sheraton Hotel in Pittsburgh.

At the opening convention session Dr. L. E. Jackson, dean of the college of agriculture at Pennsylvania State University, will deliver a talk on "Looking Ahead in Agriculture." Another speaker will be Dr. Richard Phillips, department of economics and Sociology, Iowa State College. His topic will be "The Planning Process in Feed Mill Management."

A two-hour clinic on "Attitudinal Sales Training" will be conducted by Jeff Coats, president of the Professional Sales Training Co., Akron, Pa. He was formerly sales training director for the New Holland Machine Co. and the United States Steel Corp.

89 Feed, Allied Firms Donate to 4-H Fund

WASHINGTON—A total of 89 feed manufacturers and allied firms and industries have contributed to a feed industry fund-raising drive in behalf of the 4-H foundation, Washington.

J. D. Sykes, vice president, Ralston Purina Co. and chairman of the drive, said the 89 companies had made their contributions by Aug. 15. The drive is scheduled to be completed this month.

In a mid-August letter to the industry, Mr. Sykes said he has been "pleased with the response from my personal appeal to the entire feed industry."

Mr. Sykes, who is also chairman of the foundation's 4-H Builders' Council, said the feed industry is being joined by other agriculturally related groups — fertilizer dealers, banks, cooperatives and the farm equipment industry — in extending support to the 4-H club work on a nationwide basis.

"I want to close the program this month," Mr. Sykes said in his letter, "and it is my desire that every company in our industry have the opportunity to be represented on the list of donors."

He said the program is not only worthwhile, but also is of significant value in expanding the over-all public relations of the feed industry and is an excellent example of what can be accomplished through the private enterprise system.

Funds donated to the foundation are to be used for the operation of the National 4-H Center in Washington, which is to open in the spring of 1959 as a citizenship and leadership training center. The funds are also used for the International Farm Youth Exchange, which conducts exchanges between the U.S. and 50 countries of nearly 300 rural youth, as well as for a broad program of human development-human relations training for youth leaders.

Pembroke Pinckney, Sr., Dies on Ocean Liner

MEMPHIS — Pembroke Pinckney, Sr., Memphis, past president of the Valley Oilseed Processors Assn. and for 30 years manager of the Lake County Oil Mill at Tiptonville, Tenn., died recently aboard an ocean vessel.

Mr. Pinckney, 78, was stricken with a heart attack while enroute from New York City to Caracas, Venezuela, for a two-week vacation trip.

17 Counties Form First District of Illinois Association

CHICAGO—The organization meeting of the Illinois Feed Assn.'s first regional district resulted in new district officers and a lively discussion when feed dealers from 17 counties met recently to form the group.

Three roundtable discussions were held at the meeting, which took place at New Berlin, Ill. The discussions brought out opinions on bulk feed handling, the operation of a grain bank and ways to compete with direct selling.

New officers elected at the meeting were as follows: Ray Hewitt, Hewitt-Ware Feed & Supply Co., Hillsboro, president; Fred Thady, Winchester (Ill.) Grain Co., vice president; Ronald D. Weller, A&O Grain Co., Argenta, secretary.

Dan Teefey, Teefey Grain Co., Mt. Sterling, enumerated and explained the problems he feels are involved in bulk feed handling—facilities needed, scale setup and bin arrangement, delivery, shrinkage and the credit problem.

"With sacked feed," Mr. Teefey said, "the feeder knows how much it's going to cost, but with bulk (due to the weight variable) he'll have you send him a bill."

He described bulk feed handling as "nice business that will increase your tonnage," but he said that bagged feed is still better for the small feeder.

The equipment aspects of bulk feeding were discussed by Harold Hoppe, Butler Mfg. Co., Kansas City. His discussion brought up the question of methods of getting the tanks on the farm—from direct feeder ownership to a lease and rental plan. In a lease and rental plan, the feeder would make a small down payment and then would pay an additional fee per ton of feed which would be added to his bill, Mr. Hoppe said.

Discussion of the grain bank indicated that the dealers feel the big pitfall in this type of program is in accounting. Bill Hennebry, Monticello (Ill.) Grain Co., displayed ledger and statement forms that, he said, have proved satisfactory.

In his system, all feed grains are accounted for in pounds. Then, as the grain is drawn off for feed or mill use, entries are made. Copies are sent to the customer so he has a monthly accounting. Mr. Hennebry emphasized, however, that correct posting to the elevator account is mandatory if the system is to work correctly.

Also discussed in connection with the grain bank system were handling and storage charges and grain grade. Mr. Hennebry said he dries all corn received to No. 2. The farmer pays for the drying and takes the shrink. Bill Sterrenberg, Charlotte Farmers Grain Co., Chatsworth, said his farm charges 2¢ for grain to be fed later, but charges for difference in grade.

A way to compete with direct selling was outlined by Lee Loomis, Loomis Hatchery, Chatsworth. He said he was determined to set up a resale program based on a genuine interest in his prospective customers. He said he made his service one-stop, complete with a line of vaccines, garden seeds, sprays and the like. He added the personal touch by doing his own contact work.

He said he used advertising in all forms and played public relations for all it was worth. He also said it is a good idea to ask salesmen who call on dealers for pointers in selling.

Ross River, River Feed & Hatchery, Preston, Iowa, and Marwood Hendrix, Hendrix Hatchery, Kankakee and Herscher, also spoke on servicing the customer.

L. H. Fairchild

HONEGGER DIRECTOR—Sam R. Honegger, president and chairman of the board of Honeggers' & Co., Inc., announced the election of L. H. Fairchild, vice president and general manager of Honeggers' Lincoln, Neb., operations, as a director of the company at the annual shareholders meeting held recently. Mr. Fairchild was president of Hill-Fairchild Feed Co., Lincoln, before its purchase by Honeggers' on July 1, 1958. Mr. Fairchild is a graduate of Kansas State College, and he served on the staff of the school of agriculture at Purdue University for eight years following World War I. He was then associated with a feed processing equipment manufacturer and later with a national feed firm until 1942 when he and another Lincoln, Neb., businessman established their own feed firm.

Turkey Purchases

WASHINGTON—The U.S. Department of Agriculture announced the purchase of 3,240,000 lb. of turkeys for use in schools participating in the National School Lunch Program and stated that it would consider offers for approximately 1 million pounds weekly until further notice.

Purchases last week bring the total bought since July 31 to 5,520,000 lb., which is sufficient for approximately one nationwide distribution for school lunch use.

Prices paid last week ranged from 35.47 to 37.50¢ lb. In making awards, consideration was given to transportation costs for distribution. Offers were accepted from 16 of 25 bidders who offered a total of 4,530,000 lb. Approximately $1,168,000 of funds transferred by Congress from Section 32 for use under the National School Lunch Act will be expended for the purchase, bringing the total to $1,995,000.

Pelleting Study Reported At Michigan Swine Day

EAST LANSING, MICH.—A report of experiments with pelleted rations for pigs was one of the featured topics on the program for the third annual Michigan Swine Day held at Michigan State University Aug. 14. Some 350 visitors heard research reports and observed hog feeding experiments at the MSU campus.

Dr. J. A. Hoefer, swine nutrition researcher at the university, in explaining experimental work, reported that pigs getting pelleted feeds can outgain pigs on the same rations in meal form.

He told the group that scientists don't know exactly why pigs on the pellets gain faster and use less feed than competitors on meal forms. "The improved feed efficiency and increased gains with pelleted feeds may be due to a denser feed, increased palatability, increased consumption, less dustiness and less waste. Also, the pelleting process may change the physical structure of the feed in such a way as to permit more use of the nutrients," he said.

In Dr. Hoefer's experiments, pigs got three rations in both meal and pellet form: (1) high corn, (2) oats replacing some of the corn to make up 20% of the total ration, and (3) oats replacing corn to make up 40% of the total ration.

Pigs on the three meal rations went down in rate of gain as the level of oats went up, Dr. Hoefer stated.

Daily gain for pigs on the high energy corn ration was 1.53 lb. for the meal and 1.68 lb. for the pelleted feed. With 20% oats in the meal ration, rate of gain slipped to 1.47 lb.; at the 40% level, rate of gain skidded to 1.29 lb. per day. Pigs on pelleted rations containing oats did not slow up in their rate of gain.

Efficiency Differences

Pigs on the pelleted rations containing no oats used 2.88 lb. of feed per pound of gain. With 40% oats, pigs on pellets used 3.12 lb. of feed per pound of gain.

Adding oats to the ration increased the feed cost per 100 lb. of gain because the efficiency went down. Figuring a $5 a ton differential between meal and pelleted rations, it didn't pay in these trials to pellet the high corn ration, Dr. Hoefer said, as efficiency wasn't high enough to cover the added cost. But with oats in the ration, the pelleted feeds were enough more efficient to pay the extra cost.

Cost per 100 lb. of gain ranged from $8.75 for the high corn meal ration to $9.98 for the meal ration containing 40% oats. Cost per 100 lb. of gain for pigs on pelleted feed was $8.80, $8.86 and $9.35 for the

(Turn to MICHIGAN STATE, page 92)

Albers to Open Mill At Eugene, Oregon

PORTLAND, ORE.—The Albers Milling Co. will open a new feed mill at Eugene, Ore., about the middle of September, according to Troy Cox, vice president in charge of feed.

Full production of the new mill will be 3,000 tons of mixed feed a month, with both mash and pelleting facilities. Modern equipment is being installed to handle bulk shipments.

Work is also progressing on another Albers feed plant at McMinnville, Oregon.

SW
FOR THE BEST IN
AIR CONVEYORS
SPROUT-WALDRON
MUNCY, PENNA.

MILLFEED • FEED GRAIN
FEED INGREDIENTS
What Do You Need?
—Jerry Parks
633 Board of Trade
KANSAS CITY, MISSOURI

• FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S •
Grain Feeding Results Multiply with
Fruen's Minneapolis, Minn.
CORN-OAT PELLETS
(50% Corn and 50% Oats in Pellet Form)
Eleven years of Fruen experience in pelleting grain will assure your customers more gain per pound of grain fed—
1. Grain is first FINE GROUND— the nutritious heart of the grain is exposed.
2. Grain is completely STEAMED— begins chemical conversions of starches to sugars for faster, easier digestion.
3. Grain is PRESSURE PELLETED— bulk is reduced, waste minimized, feeding economies and gains increased.
ADDS UP TO:
• Better feed conversion for your feeders
• Extra profit for you.
Investigate our direct shipment plan for low delivered costs for your feeder accounts.
For HOGS — TURKEYS — POULTRY — CATTLE
Recommend and sell . . .
FRUEN'S CORN-OAT PELLETS—FRUEN'S MIXERS' BRAND PELLETED WHITE OATS
Order Thru Your Fruen Distributor or Order Direct from
Millers TO THE FEED TRADE
FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA
• FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S •

Purdue Research Results Reviewed at Swine Day

EDITOR'S NOTE: The extensive program of swine nutrition research conducted at Purdue University over the past several months yielded much new information of interest to feed men and feeders who attended the Purdue Swine Day this week. For those unable to attend the event, the following summary, prepared by Dr. J. H. Conrad, assistant professor of animal science at Purdue, provides highlights of the research reports.

LAFAYETTE, INDIANA — Over 2,000 swine producers, feed men and interested persons attending the 38th annual Swine Day here Aug. 22 heard highlights of Purdue swine research discussed and received the results of the experiments in an attractive gold-covered booklet. During the year of "Golden Anniversaries"—American Feed Manufacturers Assn., Animal Production, and Poultry Science—gold has become symbolic of the progress that has been made in nutrition, breeding, management and feed manufacturing during the past 50 years; and, likewise, is indicative of the future advancements in these fields.

Dr. W. M. Beeson, who is in charge of animal nutrition research at Purdue University and president of the American Society of Animal Production, vividly pointed this out with regard to one facet of this complex industry in his talk, "Swine Nutrition—Past, Present and Future," during the afternoon program in the Hall of Music.

Visitors at the swine nutrition farm during the morning program heard discussions of the experiments and saw the pigs that were fed the various experimental rations.

Experiments concerned with growing-finishing swine were:

1. A comparison of pellets, meal and free-choice as methods of feeding.
2. Effects of hygromycin and a combination of antibiotics.
3. Effects of arsenicals, combinations of antibiotics and piperazine phosphate.
4. Effects of feeding five different tranquilizers.
5. A comparison of low vs. high moisture shelled corn.
6. Response of swine cooled with a sprinkler to two levels of energy in the diet.

Results of a fifth corn silage feeding experiment concerning the supplementation of corn silage for gilts during gestation were also released. Highlights of the Purdue research findings are summarized here.

PELLETS: Six treatments (shelled corn or ground corn and protein supplement free-choice, a mixed ration, 2.6% fiber, of ground shelled corn and supplement fed as a meal or a pellet, a mixed ration, 7% fiber, of ground ear corn and supplement fed as a meal or a pellet) were fed to study the effects of pelleting rations containing two levels of fiber compared to free-choice method of feeding.

Pigs fed the pelleted low fiber (2.6% fiber) mixed ration gained 1.78 lb. daily as compared to 1.71 lb. for the pigs fed free-choice shelled corn and protein supplement or 1.67 lb. for the pigs fed free-choice ground corn and protein supplement. Differences between these gains were not significant. However, pigs on these three treatments gained significantly faster than pigs fed the higher fiber (7% fiber) meal ration.

Free-choice feeding of shelled corn (15% moisture) and protein supplement resulted in the most economical gains as indicated by feed costs per 100 lb. of gain. This feed cost was $9.23 per cwt. of gain compared to $9.47 for free-choice ground corn and supplement, $9.54 for the pelleted low fiber ration and $9.64 for the low fiber ration fed as a meal. Returns per pig above feed costs were similar for pigs fed free-choice shelled corn and supplement ($26.89) compared to pigs fed the pelleted low fiber ration ($27). This comparison reflects the more economical gains made by the free-choice fed pigs and the more rapid gains made by the pellet fed pigs.

Pelleting of the low fiber mixed ration resulted in significantly faster gains than when the same ration was fed as a meal. However, it should be pointed out that the pigs fed the low fiber meal ration exhibited a high incidence of scouring early in the experiment, and this markedly reduced early gains.

Pelleting of the low fiber ration resulted in the following pounds of feed saved: 22 lb. of feed per 100 lb. of gain when compared to the same ration fed as a meal; 25 lb. of feed when compared to free-choice ground corn and supplement; 32 lb. of feed when compared to free-choice shelled corn and supplement.

Pelleting of added fiber from corn cobs saved 22 lb. of feed per 100 lb. of gain (385 lb. of feed compared to 407 lb. feed). In this study, the feed saving was the same regardless of the fiber level (22 lb. of feed was also saved by pelleting the low fiber ration).

HYGROMYCIN: Dr. J. H. Conrad, swine nutritionist, summarized the results of two recent Purdue experiments (Mimeos. A. H. 233 and A. S. 242) on feeding hygromycin and combinations of growth stimulating antibiotics continuously from weaning to market weight as follows:

Hygromycin effectively controlled roundworms, nodular worms and whipworms. In combination with growth stimulating antibiotics, hygromycin had little effect on gains, but in the absence of antibiotics, hygromycin depressed gains. On pasture, hygromycin improved feed efficiency 2 to 10% when fed to non-wormed pigs but no change in feed efficiency was noted in drylot. In six of eight comparisons, feeding hygromycin reduced feed intake.

Pigs wormed twice with piperazine adipate gained more rapidly than non-wormed pigs fed hygromycin alone (no antibiotics). No significant differences in daily gains were found between pigs wormed with hygromycin or piperazine adipate when these treatments were used in conjunction with antibiotics (aureomycin, penicillin, terramycin or zinc bacitracin).

ARSENICALS: An experiment on the effects of arsenicals, combinations of antibiotics and piperazine for growing-finishing swine was reported by Dr. C. E. Jordan, Department of Animal Science. He found that pigs

(Turn to PURDUE, page 90)

K. L. Overley J. W. Withers

NEW FIRM—K. L. Overley and J. W. Withers have opened a new brokerage firm in Memphis (Feedstuffs, Aug. 9). Known as Overley & Withers, the firm is located at 4711 Poplar Ave. It will deal in cottonseed and soybean oils and meals, grain and feed ingredients.

Charles W. Landry

GENERAL MANAGER—Charles W. Landry, treasurer and assistant manager of Crosby Milling Co., Brattleboro, Vt., has been made general manager, according to an announcement from Wirthmore Feeds, Inc., Waltham, Mass., parent firm. Mr. Landry succeeds the late Frank P. Philbrick, who died last month. Mr. Landry will continue as treasurer in addition to the duties of his new post. He has been with Wirthmore since 1933. He was transferred to the plant as office manager in 1940 and later was made assistant plant manager and treasurer.

O. A. Cooper Co. Elevator Destroyed

HUMBOLDT, NEB. — Fire in an O. A. Cooper Co. elevator here has caused an estimated $100,000 in damage. Destroyed was a frame elevator filled to capacity with 55,000 bu. of milo and wheat.

Firemen from Humboldt and three neighboring communities battled the blaze for three hours to keep it from spreading. Under construction nearby is a flat storage building of 212,000-bu. capacity.

Joseph Genoa, company secretary, said the elevator will be replaced with a new steel structure. He said the fire has delayed construction of the new flat storage building and will affect storage operations of the firm somewhat, but the feed and flour milling operations some 300 yards from the site of the fire were not affected.

The cause of the fire has not been determined, Mr. Genoa said. Workers were still cleaning out the building late this week to get to the working floor where it is believed the fire got its start.

Soilage, Not Silage

A recent Iowa State College report on the use of crude soybean oil or lard oil to reduce bloat was incorrectly quoted in Feedstuffs (Aug. 16, page 93) as a result of a typographical error. The Feedstuffs news story quoted the Iowa report as stating that: "For animals consuming alfalfa silage, effective bloat control came from sprinkling crude soybean oil over the silage at the rate of ¼ lb. per 1,000 lb. of body weight daily." This should have read: "For animals consuming alfalfa soilage, effective bloat control came from sprinkling crude soybean oil over the soilage . . ."

Milton Stern Dies

NEW YORK—Milton Stern, assistant sales manager of Magnus, Mabee & Reynard, Inc., died recently of a heart attack. He was 63. Mr. Stern joined the firm in 1924 and for many years directed activities of the contract department. Surviving are his widow, a brother and two sisters.

Virginia PEP Program Moves Toward Goals Of Expanded Industry

RICHMOND, VA. — A statewide program in Virginia to build and modernize the state's poultry industry will emphasize career opportunities at a Poultry Career Field Day to be held Aug. 26 at Virginia Polytechnic Institute, Blacksburg.

The career field day is a part of a larger Poultry Expansion Program (PEP) which has been generating "pep" in recent weeks.

Taylor L. Grizzard, director of the PEP movement, said enthusiasm of local meetings and poultry industry developments indicate progress toward the goal of the program.

A series of meetings are being held throughout the state to present to farmers and business alike the reciprocal benefits of building the Virginia poultry industry, he said.

Mr. Grizzard, a marketing specialist, left his post with the Virginia division of markets last spring when appointed by directors of the Virginia Poultry Federation to head the PEP program.

While much of the emphasis has been on Virginia's large broiler business, the reorganization of the Virginia Egg Council "has brought another vigorous PEP force into play," Mr. Grizzard said.

The finance committee of the egg council at a recent meeting approved final details of a program to raise necessary operating funds from the various sections of the state's egg industry, reports John S. Hill, Pepper, egg council president.

Another council committee has drawn a broad blueprint for long range promotion and merchandising that includes eventual development of a Virginia egg label. The announcement said several major projects to increase production of quality eggs are under way.

The latest of these was an announcement by a feed firm that it has an egg marketing center under construction with an initial weekly capacity of 6,000 cases, the federation announced.

Terephthalic Acid for Feed Not Yet Approved

WILMINGTON, DEL. — Approval of the Food & Drug Administration has not been obtained for terephthalic acid as a feed additive, but considerable work is being done at an investigational level, according to a report from E. I. du Pont de Nemours & Co., Wilmington. The explosives department of the company makes the material in commercial quantities at Gibbstown, N.J.

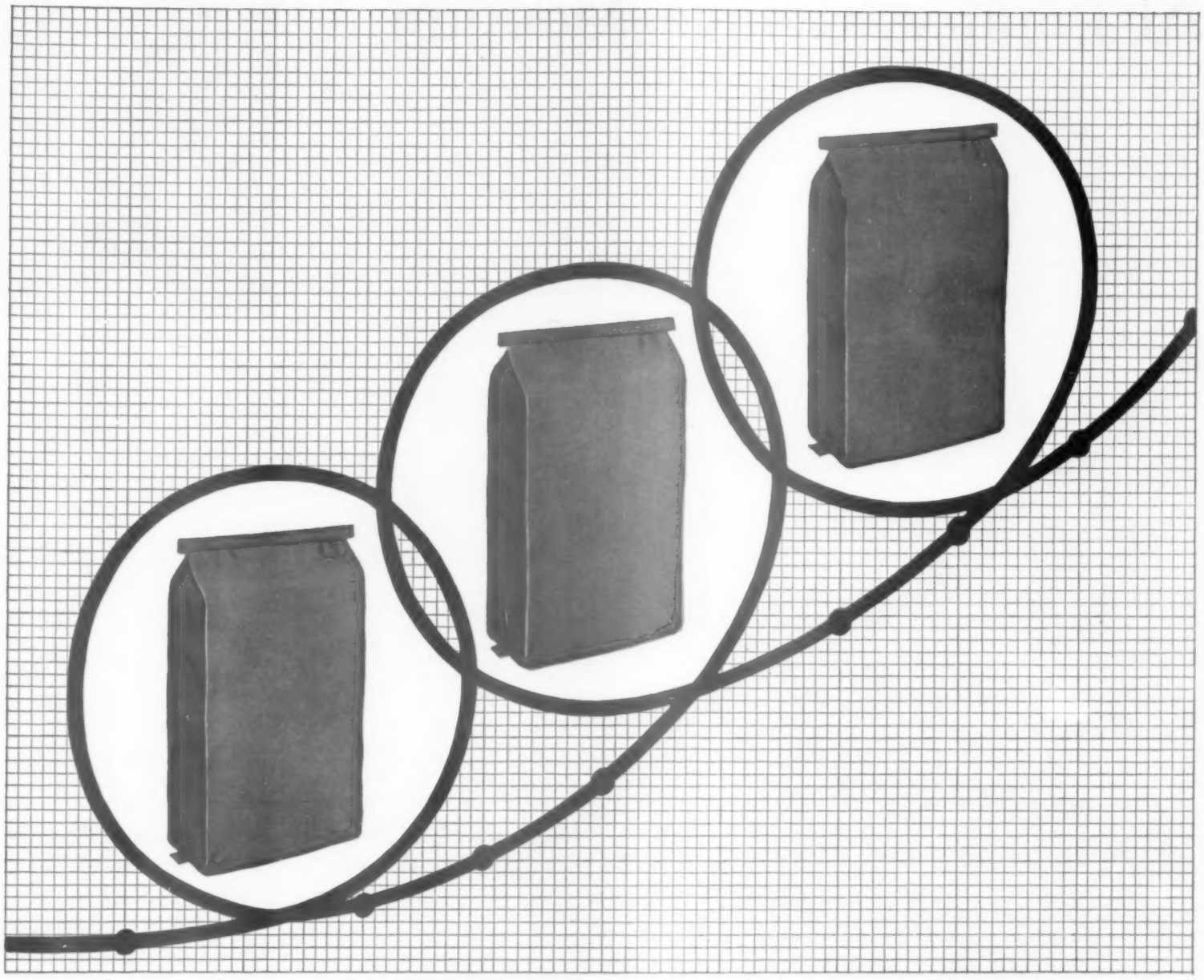
Terephthalic acid reportedly will increase the absorption of antibiotics from the intestinal tract into the blood stream of poultry, and therefore shows promise as a control of chronic respiratory disease (Feedstuffs, July 26, page 79, and Aug. 2, page 1). It is a white powder, and is very slightly soluble in water.

The report from Du Pont explained that the company is not conducting any research of terephthalic acid as a feed additive, but that it is supplying the material to others for investigational work.

Nellis Feed Co. Host At Dinner, Grid Game

CHICAGO—Joseph G. Nellis, president of the Nellis Feed Co., Chicago feed brokerage firm, and his associate, Don Huffman, were hosts at a recent dinner and football game for 35 guests from the feed industry.

The dinner, held at the Union League Club, was followed by attendance at the College All-Star football game at Soldiers Field. The evening has been a long-established custom with the firm.



YOUR SALES NEED A LIFT

There's not a company anywhere that isn't ready to increase its sales . . . and Bemis has an idea that will make your customers open their eyes (and checkbooks) wide (and frequently): Bemis multiwalls with COLORED outer plies! Color sells . . . it always has . . . and it always will . . . and Bemis multiwalls with colored outer plies draw attention like honey draws flies.

The colored kraft is made in Bemis' own Peoria Mill and there is a paintbox assortment of supermerchandising colors ready for prompt shipment. Do you have a special color in mind? Bemis can match it.

Put good-looking Bemis printing on good-looking Bemis colored kraft, and it's SELL, SELL, SELL!

Bemis—General Offices—408 Pine Street, St. Louis 2—Sales Offices in Principal Cities

where flexible packaging ideas are born

Nutrition Milestones Reviewed At Poultry Science Meeting

By Dr. Elton L. Johnson
University of Minnesota

EDITOR'S NOTE: The accompanying review of research papers presented at the 50th anniversary meeting of the Poultry Science Assn. covers several of the more significant findings in the field of poultry nutrition during the past year. Additional research reports will be reviewed in a second article by Dr. Johnson to appear in Feedstuffs next week. Dr. Johnson is head of the poultry department at the University of Minnesota.

v v

Nutrition research accomplishments were much in evidence at the golden anniversary meeting of the Poultry Science Assn. held at Cornell University Aug. 5-8. More than 80 nutrition papers were presented and 16 were read by title only. This report and the one which will appear in the next issue of Feedstuffs will cover some of the more interesting and practical papers reported at Cornell. The reports are from colleges or U.S. Department of Agriculture experiment stations unless otherwise indicated.

Energy Requirements

Energy requirements and grain treating were items studied by several researchers during the past year. Maryland reported significant increases in egg size due to feeding corn oil, tallow or hydrolyzed and vegetable fat. This work also demonstrated no difference in egg yolk lipids and cholesterol, which is a favorable report to egg consumption in the human diet. The State College of Washington also reported increased egg size when corn oil was fed, but not when tallow provided additional energy. These workers proposed the presence of unidentified factors in corn oil. Egg shell thickness (measured as specific gravity) does not appear altered by feeding tallow according to the Canadian Department of Agriculture.

Studies on energy and protein levels in broiler rations in laboratories at the Louisiana State University and the Monsanto Chemical Co. showed improved feed efficiency when energy levels are increased after five weeks. A simultaneous reduction in protein level tended to offset the improvement of increased energy.

Energy limitation by restricted feeding of meat-type white Plymouth Rock hens improved egg production and reduced mortality in a two-year study at Connecticut. Emphasis was placed on the fact that limited feeding was profitable only when high energy (1014 productive calories per lb.) formulation was involved.

Although increased energy levels in both growth and egg production studies usually result in improved feed conversion, this does not necessarily mean maximum economy. Lower costs for poultry meat can be obtained in broiler programs by high energy levels which can at times include added dietary fat. However, higher energy levels to produce eggs require more calories per dozen eggs and raise some question regarding economic efficiency.

Grain Treatment

Grain treatment improvement techniques and results occupied most of one morning's program. Barley has been studied extensively and can be treated to give results comparable with corn in chick diets. There is some disagreement among investigators, however, as to whether the treatment improves barley utilization by laying hens. It appears that treatment of barley improves its nutritional value in at least two ways: First, it increases available energy; second, it provides activity in the area known as unidentified factors.

Utah reported a hulless barley developed at that station could be improved by the addition of crude fungal and bacterial enzymes, cottonseed oil and water soaking. Improved water treating occurred when the barley was soaked in an extract of corn, wheat or milo. This effect suggests such extracts may contain additional enzymes or unidentified substances which enhance enzyme action in the soaking process. The Western Washington Station also found that amylolytic enzymes improved barley essentially equal to corn for chicks but concluded treated barley was inferior to corn for laying hens, requiring 8% more feed to produce eggs than corn.

An unusual report from Wyoming on breeder hens showed increased hatchability when barley was enzyme-treated compared with water treatment. The 24% increase in available energy by water treatment of pearled barley was accomplished at Washington State College. Metabolizable energy increased from 1,370 to 1,728 calories, an obvious improvement in barley feeding value.

Antibiotic Discussions

Antibiotic and other dietary stimulant reports did not occupy the prominent place in the session as has been true in earlier years. The specific manner in which antibiotics act in nutrition continues to be complex and unanswered.

Eli Lilly & Co. laboratories reported erythromycin was effective in improving feed efficiency in rations containing penicillin. This report also indicated an antibiotic referred to as 13184 is effective in improving growth as well as feed efficiency in broilers.

Abbott Laboratories' studies with erythromycin thiocyanate showed a significant response when 2, 5, 10, or 100 grams per ton were added to the A.N.R.C. ration which did not contain penicillin or arsanilic acid. Their report further indicated bronze turkeys could tolerate 100 grams of erythromycin thiocyanate without ill effect or reduced feed consumption from 7½ to 18 weeks of age. This is in direct contrast with the swine rejection of feeds containing more than 30 grams.

Increased growth in the range of 5 to 10% by feeding the new antibiotic, oleandomycin, was reported by the Chas. Pfizer & Co. laboratory. Increased resistance of intestinal micrococci to either penicillin or oleandomycin was not evident in these tests. Significant increases in growth by feeding oleandomycin (as the chloroform adduct) was also observed at the Arkansas Agricultural Experiment Station.

Reports on activities in other areas will be in the concluding portion of this review next week.

Dr. Elton L. Johnson

PLAN COLORADO FEED CONFERENCE—Planning for the Colorado Formula Feed Conference, which is to be a part of the annual Extension Conference at Ft. Collins, Colo., Sept. 29-30, was being accomplished as this photo was taken. Sponsoring the conference are Colorado State University, the Colorado Grain, Milling & Feed Dealers Assn. and the Midwest Feed Manufacturers Assn. Left to right are Dr. Lloyd Washburn, Colorado State University, feed conference chairman; Alf Owens, Simpson & Co., Colorado Springs; Dr. Gerald Ward, Dr. Fern Bowman and Miss Mae Stenk, all of Colorado State University; Lloyd Larson, Midwest Feed Manufacturers Assn., Kansas City; Harold Johnson, Ranch-Way Feed Mills division, Colorado Milling & Elevator Co., Fort Collins; Sherman Hoar, county agent leader, Colorado State University; Ted Hartung and Dr. W. W. Brown, Colorado State University; Otis Sherill, Ralston Purina Co., Denver; Dr. Paul Thornton, Colorado State University.

Iron Injections Boost Pigs' 35-Day Weight

CLEMSON, S.C.—Baby pigs treated with iron injections as an anemia preventive showed a significant increase in growth over controls at 35-day weights, a Clemson Agricultural College researcher reported recently.

D. L. Handlin, assistant animal husbandman at Clemson, said the increase at the 35-day weight was significant. However, at 56 days, the increase was not significant.

He also pointed out that more than a year of testing showed no adverse effects on the growth of baby pigs.

All pigs in the test had free access to clean soil in the farrowing pen. In addition, half of the pigs received a 2-cc. injection of iron before they were three days old.

For the test, Mr. Handlin selected 35 pairs for equal birth weight within sex and within litter. One pig in each pair was injected and individually marked. All pigs were weighed at one day, 35 days and 56 days.

New Installations of Machinery Continue

Continued projects for the modernization of milling facilities or construction of new feed mills continue. This is noted in a recent report from the Prater Pulverizer Co., Chicago.

The firm tells of new machinery installations at more than 60 mills in 17 states in various parts of the country — Wisconsin, New Jersey, Washington, Missouri, Illinois, Ohio, North Carolina, Idaho, Mississippi, Michigan, Minnesota, Indiana, Iowa, Virginia, Nebraska, Kentucky and Florida.

The machinery includes new Prater grinding, mixing, conveying and other equipment.

Pennsylvania Reports On Commercial Feed Tonnage Sold in '56

EPHRATA, PA. — Pennsylvania's first annual summary of commercial feed tonnage sold in the state reports that poultry feeds accounted for slightly over 1 million tons of the total of 1.6 million tons of mixed feeds sold in 1956, according to Grist From the Mill, publication of the Pennsylvania Millers & Feed Dealers Assn.

The tonnage figures are based on commercial tonnage reports used by dealers for computing and remitting the feed control fee or tonnage tax required by the state's new Commercial Feed Law.

Second in order of tonnage were dairy feeds with 361,468 tons. Hog and pig feeds were third with 119,137 tons. Pet foods were fourth with a reported 104,374 tons sold—more than the combined tonnage for steers, calves, horses, goats, sheep and miscellaneous animals.

The association publication points out, however, that the report was compiled from the first tonnage tax report required by the new law, and that the report covers the previous year (1956).

"Unquestionably," the publication said, "a sizable amount of feed sold that year never was reported. When the new Commercial Feed Law was being debated in the legislature in 1956, the association estimated the total tons of mixed feeds—not counting custom mixing or straight ingredients—sold annually in Pennsylvania to be between 2 and 2½ million tons. We still think our figures are reliable."

The publication stated that since dealers have become familiar with the reporting forms and the state has put some teeth into enforcement of the law, the new figures should be quite accurate.

Texas Feed Firm Offers Customers "Pig Factory" Plan

NACOGDOCHES, TEXAS—A "pig factory" program which offers swine producers a pig parlor system with a built-in supply of feeder pigs has been announced by Texas Farm Products Co., manufacturer of Lone Star Feeds.

The program is designed to spread hog production over the entire year without "the many failings of the so-called 'pig parlor' operations, not the least of which is an adequate supply of feeder pigs," the firm says.

Pigs are supplied in the Lone Star pig factory by a complete swine program with year-around farrowing of the producer's own gilts and sows.

To help get the producer started on a year-around schedule and to build up his herd of meat-type animals, the Lone Star experimental farm will sell bred Yorkshire gilts to the producer for $100, with a minimum of three to a purchaser. Other breeders of meat-type hogs have also been lined up by the firm to supply bred gilts to producers who need them at a cost of $75 to $100.

This source of pigs, along with the company's feeding program, gives the producer a continuous supply of feeder pigs, properly started, "at much less cost than feeder pigs can be purchased in the open market."

The company announcement said the plan also fits into the program of a producer who wants to raise meat-type pigs for the feeder market.

Emphasized in the system are the first five weeks of hog production, which determine "how economically the pig can be fed out to a finished, 200-220 lb. No. 1 hog."

Building Requirements

The only pasture required is that used for replacement stock. Gilts are bred at eight months and are kept on range until five days before farrowing when they go into a 6 ft. by 8 ft. farrowing pen. They are kept here until the pigs are one week old, and then are moved to individual sow-pig brooder pens. At five weeks the pigs are weaned and moved to growing-finishing pens in the pig factory.

The company indicated that former barns and broiler houses are easily converted into pig factories and farrowing pens at moderate costs. Building costs will vary, depending on the existing facilities and the type of material used.

Cost of Feeders

Cost of feeder pigs for a producer who buys Lone Star gilts would be about $6.60 per pig under current prices, the company announcement said. Figuring initial cost of $100 per gilt and a feeding cost of about $25, up to farrowing, about $125 will be invested in each gilt when she farrows her first litter.

For the next four litters the cost of feed will be about $46 per litter, making a total cost of $308 for five litters. Deducting salvage of the sow at 15¢ lb. would make five litters of 10 pigs each cost approximately $231 or $4.65 per pig. Cost of feeding each pig up to feeder size would bring the cost up to about $6.60 per feeder.

The total cost of feeding the pigs from birth to finished hogs is about 11½¢ lb., the announcement said. Under the program, 605 lb. feed are required to bring the animal to market weight.

"The market price for finished meat-type hogs would have to drop below 13.23¢ lb. before the grower fails to show a profit on any group of marketed hogs," the company said.

Besides giving the producer the advantage of year around marketing, the program leads to savings resulting from complete use of hog raising facilities the year around and spreading labor over the year, the announcement said. It was also pointed out that the plan is flexible and easily keyed to fit available facilities and labor.

Plans for laying out the pig factory as well as feeding and management recommendations will be supplied by the company.

Oregon Veterinarian Defines Vaccine Ruling

PORTLAND, ORE.—Oregon poultrymen are reminded that the sale, distribution and use of any live virus vaccines for infectious bronchitis, laryngotracheitis or Newcastle are illegal acts without written permission from the state department of agriculture.

Dr. K. J. Peterson, state veterinarian, explains these are live vaccines and can cause rapid spread of the disease if not handled properly. The restriction against the vaccines has been approved by the poultry industry and is helpful in protecting Oregon poultry, he added.

E. C. Voorhies Retires

DAVIS, CAL.—Prof. Edwin C. Voorhies recently retired from teaching after 45 years with the University of California college of agriculture. An authority on livestock marketing, Prof. Voorhies was one of the pioneer members of the department of agricultural economics when it was founded at Berkeley in 1925. Although retired, he will teach a reduced load of classes in agricultural economics as professor emeritus.

Alfalfa Discussions Planned at California

DAVIS, CAL.—Alfalfa from planting to pelleting will be discussed at the fall Agronomy Field Day Sept. 12 at the University of California Davis campus.

The day-long program, to begin at 9 a.m., will include talks on: feeding alfalfa hay, by Dr. James H. Meyer, department of animal husbandry; digestion trials with alfalfa, by Dr. Glen P. Lofgreen, department of animal husbandry; production of quality hay, by Luther G. Jones, agronomy specialist; pelleting, by John B. Dobie, agricultural engineering specialist; varieties resistant to the spotted alfalfa aphid, by Dr. Ernest H. Stanford, department of agronomy, and fertilizing alfalfa, by Vern L. Marble, extension agronomist.

Dr. Fred N. Briggs, dean of the College of Agriculture at Davis, will be the noon speaker.

New design! New efficiency! New economy!

Introducing the DORSEY *Bulkmaster Jr.*

WITH HYDRA-TORQUE* DRIVE

Despite its low price, the new Bulkmaster, Jr., is a rugged, dependable performer with plenty of top line features. The safety of new Hydra-Torque Drive is only part of the story: Bulkmaster, Jr., unloads quietly . . . and *fast*. 9" vertical auger and 6" final discharge auger are extra heavy-duty and the 14' discharge tube has a hanger bearing midway to prevent vibration and "whip." High-fat feeds are efficiently handled, due to exclusive multi-stage auger design.

New-type sliding hatch covers are 32" x 32", with foam rubber seals. Standard equipment includes I.C.C. lights, rear turn signals, automotive-type bumper, throttle and compartments.

Dorsey also builds a complete line of commercial dry freight, produce and refrigerator trailers and truck van bodies.

DORSEY TRAILERS
ELBA, ALABAMA

* For safe, trouble-free unloading, the large 6" screw conveyor is driven through a torque limiter from power take-off and both vertical and discharge augers are hydraulically driven . . . STOP AUTOMATICALLY if impeded by foreign objects.

Dorsey Trailers,
Elba, Alabama

_____Send Bulkmaster, Jr., brochure.
(For literature on other Dorsey products, check below)
Bulkmaster, enclosed type—
_____Air-unloading _____Auger-unloading
_____Bodies _____Trailers
_____Hi-Molasses
Combination Bag-and-bulk type—
_____Air-unloading _____Auger-unloading
_____Bodies _____Trailers
NAME:_____
COMPANY:_____
ADDRESS:_____
CITY & STATE:_____ F
_____Send name of nearest Dorsey Bulkmaster distributor.

DORSEY TRAILERS SALES-SERVICE

PROVED ON-THE-FARM
VICTOR FEEDS
THE CREITE MILLS
CRETE, NEBRASKA
Division of the Lindsay Grain Co.

No antibiotic now on the can beat the performance in building profits,

Broiler profits are protected . . . *with* **BACIFERM®**

Layers produce full time . . . *with* **BACIFERM®**

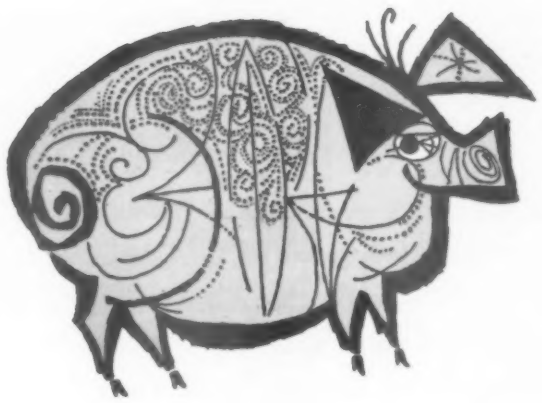
the feed that contains **BACIFERM®** *. . . with greater profits to you*

ANIMAL NUTRITION DEPARTMENT **COMMERCIAL SOLVENTS CORPORATION**

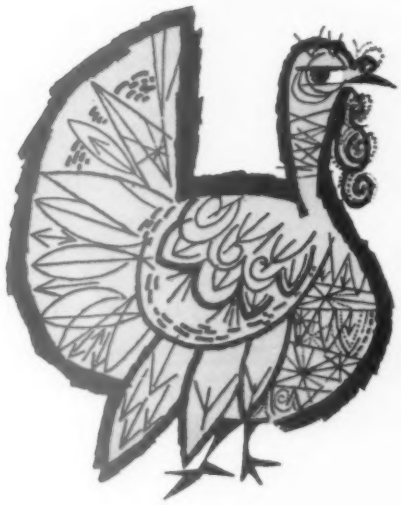
CANADIAN SALES REPRESENTATIVE: Norman Stark

market of BACIFERM® protecting against disease

Pigs pile on the pounds . . . *with* BACIFERM®



Poults speed to market . . . *with* BACIFERM®



does the job

Baciferm costs you $3 to $6 *less* per ton than the tetracyclines. So if you produce 100 tons of high-level feed per month, you save $300 to $600 per month. That's $3600 to $7200 per year! Only Baciferm contains the antibiotic zinc bacitracin, made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957. Whatever feed you make, trust Baciferm to do the job.

BACIFERM®

Zinc Bacitracin Antibiotic Supplements
FOR HIGH-LEVEL FEEDING AT LOW-LEVEL COST

260 MADISON AVENUE, NEW YORK 16, N. Y.
IN MEXICO: Comsolmex, S. A., Mexico 7, D.F.

CSC

Swine Publication Surveys 1,000 Farmers on Feeds, Feeding Methods

GRUNDY CENTER, IOWA — A look into the problems and attitudes of the hog producer as he adjusts to an ever-changing agricultural economy, as well as how he buys and uses feeds, and how he manages his hog enterprise, all are indicated in a recent study conducted for and reported by the National Hog Farmer, a monthly publication for the swine industry.

According to the paper, 1,000 questionnaires were mailed to representative hog producers across the nation by a Des Moines, Iowa, advertising firm. A total of 475 producers answered the questionnaire, returning it to the advertising firm. Names were selected by the National Hog Farmer, located in Grundy Center. The questions and answers ran like this:

1. How many acres do you farm?

1 to 149 acres	27%
150 to 299 acres	41
300 to 499 acres	20
Over 500 acres	10

AVERAGE—255 ACRES

2. How many hogs did you raise in 1957?

1 to 49 hogs	7%
50 to 99 hogs	13
100 to 199 hogs	27
200 to 499 hogs	40
500 to 999 hogs	10
1,000 hogs and over	3

AVERAGE—275 HOGS

How many planned for 1958?

1 to 49 hogs	3%
50 to 99 hogs	6
100 to 199 hogs	26
200 to 499 hogs	48
500 to 999 hogs	12
1,000 and over	5

AVERAGE—315 HOGS

More hogs planned for 1958	57.8%
Less hogs planned for 1958	17.9
Same number of hogs planned for 1958	24.3

3. How long have you lived on your present farm?

1 to 5 years	20.3%
5 to 10 years	25.4
10 to 15 years	18.8
Over 15 years	35.5

AVERAGE NUMBER OF YEARS—15

4. Have you added to the number of acres you farm in the last 2 to 5 years?

Yes	29%
No	71

AVERAGE NUMBER OF ACRES ADDED IN LAST 2 TO 5 YEARS—120 ACRES

5. Did you feed more than one brand of hog feed in 1957?

Yes	53%
No	47

How long have you fed your present brand of hog feed?

0 to 6 months	5.6%
6 months to 1 year	10.1
1 year to 2 years	8.8
2 years to 5 years	32.1
5 years to 10 years	33.1
Over 10 years	10.3

AVERAGE LENGTH OF TIME FED THE PRESENT BRAND—5 YEARS

6. Do you feed more than one brand of feed to your other livestock and poultry?

Yes	43%
No	57

7. Do you buy it from:

Farmer-dealer	7%
Local Feed Store	31
Local elevator	38
Company Salesman	14
Direct from Company	10

8. What is the main reason you buy this brand?

Better quality	38%
Better price	29
Better service	29
Habit	4

9. How many brands of feed do you have on your farm at one time?

1 brand	41%
2 brands	36
3 brands	12
4 brands	3
5 or more brands	8

10. What important factor contributed most to your last brand change?

Better dealer	21%
Better price	40
Better service	35
Better product (This one not listed on questionnaire)	4

11. Will your grain supply force you to make any changes in your 1958 feeding plans?

Yes	19.9%
No	79.6
Possibly	.5

If so, what change do you contemplate?

Changing grain in ration because of available supply of different feed grains	42%
Buying more feed grains	27
Increasing total livestock because of bigger supply of feed	15
Selling pigs as feeders	8
Increased use of pasture	4
Reduce total livestock	4

12. Do you have any figures on feed costs of any recent crop of hogs?

Yes	51%
No	49

Yes Answers

Under $7	3%
$ 7 to $ 7.99	5
$ 8 to $ 8.99	9
$ 9 to $ 9.99	22
$10 to $10.99	25
$11 to $11.99	17
$12 and over	19

(51 yes answers with no amount given)

If not, what would you estimate were your feed costs per hundred pounds of gain?

Under $7	4%
$ 7 to $ 7.99	1
$ 8 to $ 8.99	6
$ 9 to $ 9.99	15
$10 to $10.99	25
$11 to $11.99	18
$12 and over	31

13. Do you believe that meat-type hogs can be fed to market weight cheaper and faster than fat chuffy hogs?

Yes	82%
No	18

14. What level of protein do you feed?

From weaning to 75 lb.

Under 14%	5.4%
14 and 15%	14.2
16 and 17%	33.8
18%	25.6
19 and 20%	10.4
Over 20%	10.6

From 75 to 125 lb.

Under 12%	4.4%
12 and 13%	19.2
14 and 15%	37.8
16 and 17%	17.4
18 through 20%	5.8
Over 20%	15.4

From 125 lb. to market

Under 10%	1%
10 and 11%	16
12 and 13%	41
14 and 15%	15
16 and 17%	3
18%	1
Over 18%	23

15. Do you feed grain and supplement free choice or in a complete ground mixed ration?

Free choice	23.2%
Mixed ration	54.5
Both	22.3

16. Do you creep feed pigs while they are still on the sow?

Yes	98%
No	2

17. Do you self-feed or hand-feed sows?

Self-feed	18%
Hand-feed	69
Both	13

Market hogs?

Self-feed	91%
Hand-feed	5
Both	4

18. If you use self-feeders, how much space or how many self-feeder holes do you provide for sows or gilts?

1 hole for each	18.8%
1 hole for 2	25.5
1 hole for 3	18.3
1 hole for 4	13.4
1 hole for 5	8.1
1 hole for over 5	5.9

19. For watering by automatic cups, how many sows or gilts do you handle on each cup?

Less than 10	39.1%
10 to 15	12.4
15 through 20	25.6
Over 20	22.9

20. At what age do you begin creep-feeding?

Up to 1 week	12.6%
1 to 2 weeks	34.2
2 to 3 weeks	30.8
3 to 4 weeks	21.3
Over 4 weeks	1.1

21. Do you vary weaning age according to season of the year? (Fall and spring)

Yes	28%
No	72

22. Have you found what you consider the right ration to permit you to wean as early as you would like?

Yes	66.1%
No	33.9

Is this one of your major problems?

Yes	28%
No	72

23. Do you early wean by age?

Yes	53%
No	47

By weight?

Yes	59%
No	41

24. If you are on an early weaning schedule, what in your opinion are its advantages?

Breed sows back sooner	19%
Faster gain	18
Less labor	11
Sows don't lose as much flesh	9
Gives sow better chance to build up her body for the next litter	9
Less loss for pigs	5
Gets sows on market quicker	4
Saves space	3
Better use of equipment	3
Cheaper pigs	3
Permits multiple farrowing	2
Other comments	15

25. Are you on a multiple farrowing schedule?

Yes	57%
No	43

How many times a year do you farrow pigs?

Once	3.2%
Twice	52.3
3 times	8.3
4 times	20.5
5 times	1.1
6 times	5.5
Over 6 times	9.1

How many litters do you hold your sows for?

1 litter	9%
2 litters	38
3 litters	8
4 litters	9
5 litters	3
6 litters	5
Over 6 litters	4
As long as productive	24

116 farmers answered that they kept sows anywhere from one to 10 litters and statistically we couldn't arrive at any percentage for these producers.

26. Are most of your hogs finished on concrete?

Yes	35.2%
No	61.9
½	2.5
1/3	.4

27. What percentage of your total annual hog production is fed out on bulk feed?

None	60%
1 through 25%	4
26% through 50%	7
50% through 99%	13
100%	16

28. What, in your opinion, is the main advantage of bulk feeding program for hogs?

Labor saving	45%
Cheaper	24
Saves time	9
Complete rations are fed	3
Convenience	3
Better feed	3
Quicker gain	2
Insures proper protein level	2
Saves space	2
Other comments	7

29. Would you go into bulk feeding if it were available in your community?

Yes	52%
No	42
Perhaps	6

Don't lose production time...

control material flow

DRAVER FEEDERS

available with automatic controls

Avoid overloading of hammer and attrition mills, sifters, mixers, and other production machines, by using Draver Feeders to control the flow of bulk materials. Machine choke-ups can cause costly downtime and reprocessing, perhaps excessive wear on the equipment. Dravers give you low cost protection against these production losses . . . assure steady production at most efficient capacity.

There is a standard Draver Feeder to feed accurately most any bulk material, at rates from ounces to thousands of pounds an hour. Timing controls—such as shown on the Style "AA" Draver Wing-Type Feeder illustrated above—are available for feeding preset amounts at automatic intervals to continuous processes.

What is your bulk feeding problem? Send information on your requirements, and our engineers will give you details on a Draver Feeder that will save you production time and money. There is no obligation.

FEEDING • MIXING • SIFTING • GRINDING • WEIGHING • PACKING and PACKAGING EQUIPMENT FOR THE MILLING INDUSTRIES

B. F. GUMP CO.

Engineers and Manufacturers since 1872

1310 S. Cicero Avenue . . . . . Chicago 50, Illinois

R. H. Boegel Promoted By Clinton, Iowa, Firm

CLINTON, IOWA — The appointment of Robert H. Boegel as sales manager for the Middle Atlantic states has been announced by H. A. Bendixen, vice president and general sales manager, Clinton (Iowa) Corn Processing Co.

Mr. Boegel has been with the company in various capacities since December, 1947, most recently as district sales manager for the Philadelphia area. He will continue to operate from Philadelphia, but will direct sales in the entire Middle Atlantic area.

GRAIN SOLUBLES IN SHORT SUPPLY?

CONSIDER PACO!

- **ASSURED SUPPLY**
- **LOW IN COST**
- **BETTER FOR PELLETING**

Here's the sensible way to lick a short supply of grain solubles . . . use Paco! As potent and effective a feed fortifier as you'll find anywhere, Paco helps you maintain your quality feed reputation—attracts new business and brings back old customers.

In profit, in quality, Paco is an all-around money maker. And any way you shape it up, Paco means better pellets regardless of other ingredients in the formula! Palatable to stock, it is granular and free flowing, dust free and stores well for long periods. Consider Paco right now! Orders accepted for immediate or deferred shipment.

SHIPMENTS FROM PHILADELPHIA, PA. AND GRETNA, LA.

fast selling 50-lb. bag for direct sales to farmers and cattlemen.

You can count on a steady supply of Paco to cover your requirements through 1958—and beyond!

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF
PUBLICKER INDUSTRIES INC.
1429 WALNUT STREET, PHILADELPHIA 2, PA.
PHONE: LOCUST 4-1400

MIDWEST SALES AGENT—The North American Trading and Import Co., 101 Arsenal St., St. Louis, Mo. Tel.: PRospect 6-0858

Nebraska Tests Ducks Bred for Egg Production

LINCOLN, NEB.—Khaki-Campbell ducks, bred for many generations in Holland for high egg production, have been involved in a series of extensive tests at the University of Nebraska.

Dr. John L. Adams, chairman of the University of Nebraska poultry department, described some of the problems in management, nutrition, egg quality and consumer acceptance of duck eggs in a paper delivered before the annual meeting of the Poultry Science Assn. at Cornell University recently.

Marvin Rhodes, assistant in biochemistry at the University of Nebraska, reported in the paper that eggs from 18 ducks studied during a three-month experiment "compared quite favorably with chicken eggs when boiled, fried, scrambled or in custards and sponge cakes." The reaction came from a sample group of 20 Lincoln, Neb., families.

No "Fishy" Taste

The two researchers and associates found no substantiation for the common belief that duck eggs taste "fishy," in analyzing the taste tests conducted by the local families.

The ducks were housed in laying batteries with individual cages and fed a practical ration, including about 18% protein.

Egg production was variable, reaching a peak of about 65%, which held firm until hot weather depressed production.

Dr. Robert E. Feeney, chairman of the Department of Biochemistry and Nutrition, said experiments showed that duck eggs are much more stable at room temperature than chicken eggs. Albumen and yolk tests after several hundred hours showed much less deterioration in the duck eggs. The appreciably tougher albumen of the duck eggs was noticed by most families, but was not rated objectionable.

Mr. Rhodes noted that among over 60 dozen eggs gathered from the ducks and broken for research, not a single egg with a blood spot was found—which would be of considerable economic importance in marketing.

Duck eggs were reported to have a "tougher shell" on breaking and a "slightly tougher or more firm" egg white when soft-boiled of soft-fried. The albumen of duck eggs appears whiter than that of chicken eggs. This is related to the higher amount of riboflavin present in the chicken egg white, the researchers said.

Management problems reflected both advantages and disadvantages when compared to laying hen management.

The ducks were found to be of nervous disposition and easily disturbed by visitors. They seemed to require more water than hens.

Higher consumption of water by the ducks contributed to a solution for the problem of sanitation, however. Small, standard dropping pans were replaced by a sloping metal floor and droppings were removed by flushing with a hose. The refuse, when the quill feathers were screened out, was easily flushed down a sewer drain.

Inspection Fee Hike May Help Processors

RALEIGH, N.C.—Excess capacity of North Carolina poultry processing firms may prove a boon to them despite increased inspection fees.

Dr. Clayton P. Libeau, poultry marketing specialist, at North Carolina State College, said the excess capacity of the plants, in comparison to those in neighboring states, indicated the plants can be operated with less overtime and holiday work, thus reducing operating costs.

The resident inspection rates were raised 30¢ an hour July 1 by the poultry division of the Agricultural Marketing Service, but are paid by the federal government.

Overtime and holiday rates, paid by the processing firms, have been increased 40¢ an hour.

Ninety percent of the state's processing firms are expected to be using federal inspection by the end of the year, as compared to only 5% at the beginning of 1958.

Poultry Group Seeks Diagnostic Laboratory

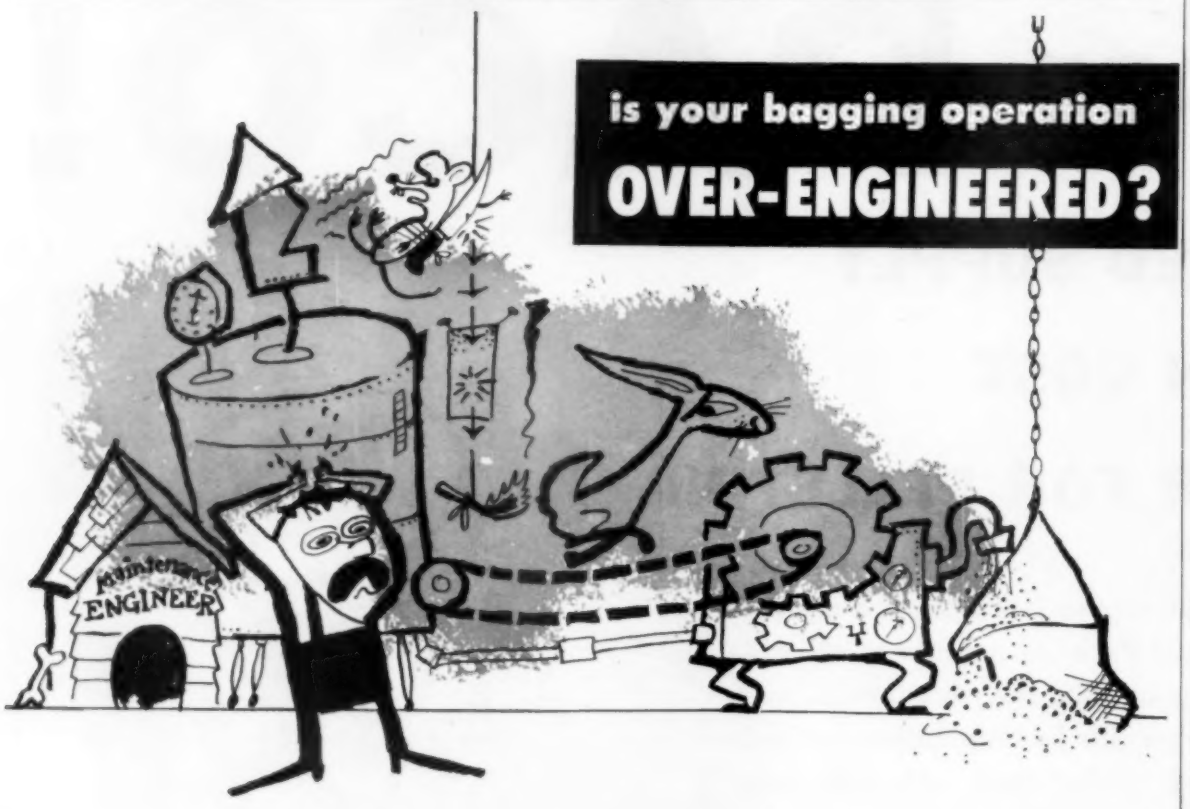
ROBBINS, N.C.—Efforts to have a poultry disease diagnostic laboratory located in this area got under way recently with appointment of a committee of poultrymen to investigate the possibilities.

The area, consisting of eight adjoining counties, has been expanding rapidly in chicken raising.

The poultrymen plan to erect the building here, and they have petitioned the state general assembly to appropriate money for furnishings, maintenance and salaries of personnel.

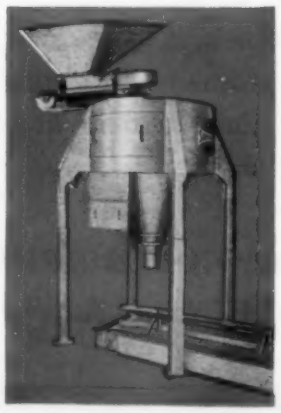
DIVIDEND DECLARED

MIDLAND, MICH.—The board of directors of Dow Chemical Co. this week declared a dividend of 30¢ per share on its common stock, payable Oct. 15, 1958, to stockholders of record at the close of business Sept. 15, 1958.



You need the new SOUTHLAND PACKER!

- **IT'S VERSATILE!** This one compact unit handles the entire range of feed products (except those of high molasses content).
- **IT'S SIMPLE!** Just one scale system, not two or three—fewer moving parts and wear points.
- **QUICK CHANGE-OVER!** A single, simple adjustment changes from 25-lb. to 50-lb. to 100-lb. bags . . . in merely a matter of minutes.
- **HIGH PRODUCTION!** Up to twenty 25-lb. or 50-lb. bags per minute, or twelve or more 100-lb. bags, with accurate weight.
- **DURABLE, RUGGED!** Heavier, more rigid construction—generous use of stainless steel and non-corroding nylon bushings.



The SOUTHLAND costs less, *saves more* . . . less spillage and dusting; minimum headroom and floor space; simple installation and maintenance. Enthusiastic users say it's "tops" in dependability.

All this, complete, less conveyor
only $2900
f.o.b. Chattanooga

DISTRIBUTED EXCLUSIVELY BY
CHASE BAG COMPANY
Packaging Specialists for over 100 years

CHASE BAG COMPANY
525 International Trade Mart, New Orleans 12, La.
Please send me free complete information on the new SOUTHLAND PACKER.
Individual_____
Company_____
Street_____
City, Zone, State_____

SCATTERGRAIN

N-E-W Inexpensive Way to Blend and Distribute Grain Evenly

Price $49.50 Each

Compact, easy-to-use grain distributor scatters and blends the flow of higher moisture grain, drier kernels, and foreign material for even distribution in grain storage bins.

Specially engineered spinner scatters grain in a zig-zag pattern thus preventing higher moisture kernels from remaining in or close to the spout line with foreign material.

This thorough blending and scattering of grain helps prevent compaction areas and provides far greater efficiency on the part of aeration systems.

WRITE FOR DESCRIPTIVE CIRCULAR AND QUANTITY PRICES TODAY.

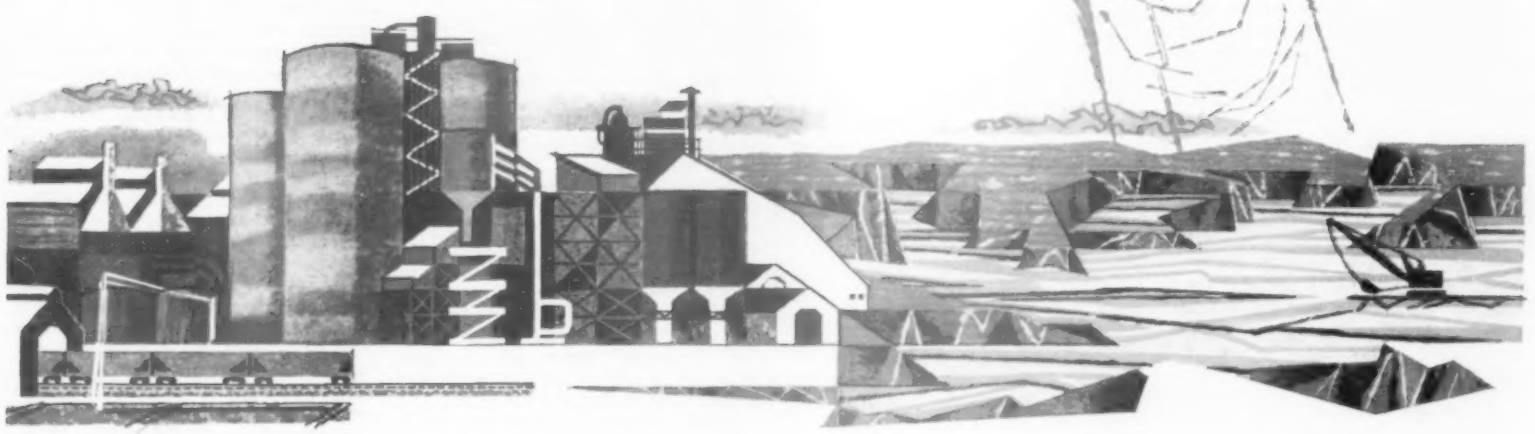
SEEDBURO EQUIPMENT CO.
Department FS-8
618 W. Jackson Blvd. ● Chicago 6, Ill.

NATURAL WONDERS

made dynamic by man

Powerful forces above, atop, and within our earth create and mold the crude treasures which man further improves to serve his needs.

. . . and raw phosphate deposits



made dynamic by modern chemistry to give you

dynamic DYNA·FOS®

today's most dependable feed phosphate

A lot happens to raw phosphate between the time International Minerals and Chemical Corporation scoops it from the ground and when you buy it as Dynamic DYNAFOS. Valuable phosphorus is extracted from the ore and is turned into beaded dicalcium phosphate, made uniform in quality, high in biological availability, low in fluorine, easy to mix and handle. It is made *feed dependable* . . . the big reason why you can count on Dynamic DYNAFOS to deliver full nutritional value from your feed formulas. Wire or call for full information.

Creators of Living Minerals

MINERALS International CHEMICALS

PHOSPHATE CHEMICALS DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

Putting Today's Research Into Feeds

"An animal nutritionist is a dietician for farm animals and poultry and formulates rations which his company manufactures and distributes. He keeps constantly alert to research and new products, and, through selection of ingredients, effectively dovetails nutritional specifications into finished feeds."

By Dr. E. I. Robertson
John W. Eshelman & Sons

EDITOR'S NOTE: The accompanying article is the third in a series being published as part of the observance of the feed industry's "Golden Year." The 12 months following the 1958 American Feed Manufacturers Assn. convention were designated as the Golden Year, focusing attention on industry and feeding progress. In this connection, Feedstuffs is publishing a series of articles on feed industry operations and nutritional advances. The author of the accompanying article points out the importance of translating research findings into practical feed formulas. He traces the background of feeding and industry progress and then discusses "using what we know." He also points out specific examples of the application of research in the formulation of modern feeds.

Dr. E. I. Robertson

AUTHOR—Dr. E. I. Robertson, born and reared in central Louisana, received his bachelor's degree at Louisiana State University, master's at Washington State College and Ph.D. at Cornell University. His research on vitamin D requirements of poultry was followed by poultry extension work in Washington. He then taught poultry courses at Washington State from 1937 to 1941. He returned to extension work when he joined the Cornell poultry department staff in 1941 but pursued graduate work, obtaining his Ph. D. in animal nutrition in 1946. At Cornell he rose from instructor to associate professor and did work in extension, research and teaching. Dr. Robertson joined John W. Eshelman & Sons, Lancaster, Pa., in 1948. As director of nutrition, he formulates feed, supervises feeding trials at the Red Rose Experimental Farm, and writes articles and bulletins on feeding and management. Dr. Robertson also is well known for his writing in farm and feed publications, talks at nutrition conferences, and association activities. He has been active in the Nutrition Council of the American Feed Manufacturers Assn. and is now serving as chairman of the council. Dr. Robertson has developed various visual aids for his presentations, and some of them accompany this article.

A Golden Year Feature

Dramatic, immediate and widespread application of the benefits of research in nutrition reach the farm in manufactured feeds and supplements in a model of efficiency rarely equaled in converting feed into food. The result is a bountiful array of food for America's table — more food, of better quality, with greater convenience, at lower cost, than anywhere else on the face of the earth.

Poultry, to a greater extent than other farm animals, are fed manufactured feeds and thus more quickly have obtained the benefits of research. However, in recent years the availability of research findings in specialty feeds and supplements is producing wide acceptance of formula feeds in other species. Notable examples are milk replacers, pig starter pellets and beef and swine supplements.

Bridging the gap between what is known and what is used, the feed industry provides a service to the livestock and poultry industry that has produced amazing efficiency in feed utilization. The excellent distributive fanout of improved rations provides an ideal vehicle for putting research to work throughout the nation. The availability of superior stock with bred-in performance potential and today's mass preventive medication permits feeders to start with bred-in and fed-in health and growth potentials undreamed of a generation ago.

Our Livestock Industry: A thriving livestock industry exists only where the productivity of the soil will support it because food for human needs comes first. A livestock industry is insurance for tomorrow's meals—the animals provide an expansible, living, dynamic storage of surplus crops; they convert and condense bumper crops into compact, nourishing foods. Our animal agriculture products—milk, meat and eggs —upgrade our diet. By condensing 2 to 5 lb. of feed into a pound of pork chops, drum sticks, eggs or milk, our animal agriculture enlarges the nation's stomach for agronomic production. Without animals there would be no need for—or use made of—our present high crop yields of feed grains.

A livestock industry is a cushion between prosperity and famine. A child would starve on pasture but a cow can eat and convert the nutrients of pasture into milk, a balanced food for a child. Likewise, grain and other roughages are converted and condensed into foods for human use. For this conversion we are dependent upon the inherent ability of the animal. In the process of converting feed into food by animals it is a matter of tear down, sort and reassemble the nutrients into the characteristic food product.

Farmers today expect and obtain greater production from animals than when they fed only the grains and roughages produced on a particular farm. Manufactured feeds and supplements are designed to supplement rather than replace farm grown feeds and roughages and account in part for the bountiful supply of animal agriculture products available for the human diet. In poultry production, wide use of complete feeds permits widespread application of benefits of research and has produced our fast growing broiler industry.

The Feed Industry: The feed industry, spearheaded by the American Feed Manufacturers Assn., has attained its present status only by its service to agriculture. It provides a market for the farmer's grains and a source of feed for his animals. In addition, the nutritional values of many milling and processing by-products, as well as by-products of the distilling and fermenting industries, have been salvaged. Above all, the feed industry has provided and promoted proper combinations of feedstuffs for balanced rations for most profitable conversion from feed into food.

So efficent has been this process of translating research findings into better rations for farm animals and poultry, which in turn are converted into food products, that our bountiful food supply is as American as hot dogs and baseball. The consumer never had it so good in an ever-increasing, never-ceasing supply of food products that reach his table with maximum convenience, economy and quality. Compared to a decade ago, food costs have advanced less than the cost of other basic neccessities of rent, fuel and clothing. Fewer hours of labor are needed to earn the purchasing power to supply daily food needs than elsewhere in the world or in previous periods of our own history. This advance in man's age-old search for food, impelled by constant hunger and the development of modern mechanical convenience, has resulted in an increasing amount of recreation time so closely associated with our standard of living and way of life.

What accounts for this phenomenal application of research that has resulted in such an economical and

Farm animals and poultry eating from the same feed trough convert feed into human food. For specific animal products, we are dependent upon the conversion ability of the animal to tear down, sort and reassemble the nutrients into the characteristic food products.

The per capita consumption of more than 1,500 lb. of food annually provides an increasing market for the products of animal agriculture with typical yearly intake of eggs, poultry, meat and dairy products. Food services now account for about 55¢ of the consumer food dollar.

plentiful supply of food? A quick answer is by putting research to work, but a bit of explanation is necessary to trace the translation of research into better and more foods.

Nutrition Council: The Nutrition Council of the American Feed Manufacturers Assn. is an important factor in harnessing research in nutrition, in maintaining and promoting animal health and in management for greatest efficiency of food production. Started in 1941 with nine members, the council has grown to 86 members—representing 76 feed manufacturers and 12 associations of ingredient suppliers. The members are technically trained individuals in charge of biological research and formulation for their respective companies. Collectively, the Nutrition Council represents the greatest assembly of feed nutritional know-how in the world. More than half of its members have earned their Ph.D. degree in biological sciences, and many have served on the staffs of agricultural colleges and experiment stations.

Operating through action committees, headed by an executive group, the Nutrition Council has promoted state nutrition conferences, has developed and maintained an AFMA abstract service to the industry, reviews research throughout the nation's experiment stations and industrial laboratories, suggests buying guides for feed ingredients, standardizes quality control methods and issues a number of management recommendations based on surveys of land grant colleges. In essence, the Nutrition Council serves the feed industry as a service club, embodying the spirit for action of a civic club, the scientific awareness on nutrition and health of a medical association, and a concern for ethics as in a ministerial group. The growing stature of the AFMA Nutrition Council has paralleled the phenomenal efficiency of converting feed into food by putting what we know into use through manufactured feeds.

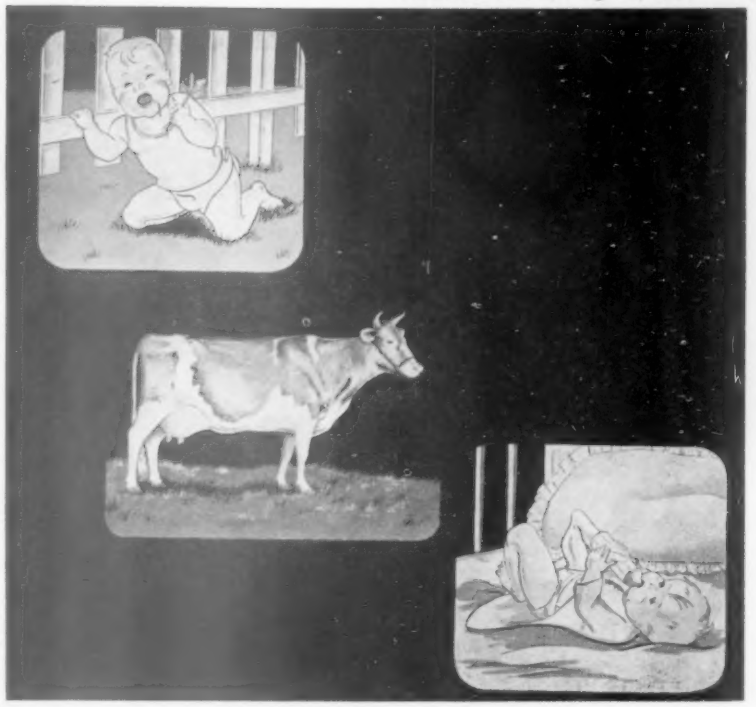
Using What We Know: An animal nutritionist, typical of all Nutrition Council members and a vast number of technically trained individuals in allied industry, is a dietician for farm animals and poultry and formulates rations which his company manufactures and distributes. In this profession he keeps constantly alert to the basic research in progress at agricultural colleges and experiment stations, and through selection of ingredients effectively dovetails nutritional specifications into finished feeds. In formulating feeds he has the benefit of—and is concerned with—an increasing number of products coming out of industrial laboratories.

A bag of manufactured feed is a compromise of nutritional needs tempered with supply of ingredients that are freely and uniformly available, combined in such proportions that provide a practical ration palatable to animals, and is in a form that can be distributed efficiently and at a cost that the feeder can afford to pay. The feeder considers a feed as raw material which is converted by his animals into milk, meat and eggs which must be sold at a price that will cover all costs of production, including a return for his labor.

Practical consideration of feed cost per unit of milk, meat or eggs requires constant appraisal of ingredients. In the final analysis, all feed additives become cost additives. Only, as, if and when added supplement provides needed nutrients that will result in lowering the cost of production is it profitable to include it in manufactured feed. A practicing nutritionist frequently conducts exhaustive tests before evidence is accumulated to justify the inclusion—or exclusion—of a particular source of nutrients.

Constantly testing the nutritional worth of new ingredients or combinations of nutrients is costly—in facilities, in time, and in talent. Facilities needed for testing combinations of additives increase geometrically rather than arithmetically — and there is no foreseeable limit to new products that are offered to feed manufacturers. Because of this cost, most nutritionists carefully review claims of new products and consider their potential before actually submitting them to biological testing. While costly, it should be realized that only in this way can feed manufacturers become exposed to and acquainted with the growing amount of fundamental research emanating from industrial laboratories of ingredient suppliers. In many cases the opportunity to test a new product under one's own conditions develops new opportunities for the feed manufacturer to provide greater service to his customers by incorporating the latest findings of research into his branded feeds.

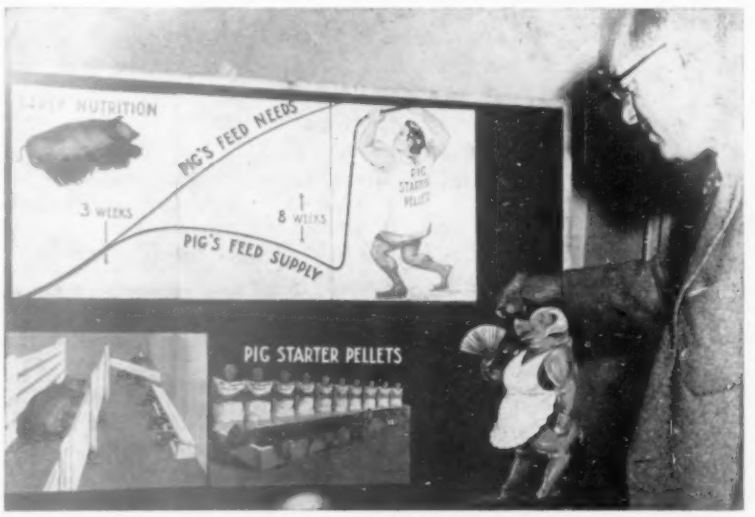
Red Rose Research Center: A nutritionist without research facilities might be described as a duck out of water, but more typically his effectiveness could be likened to a physician without his medical kit or a carpenter without tools. As is true of most feed manufacturers and ingredient suppliers, our firm established the Red Rose Research Center to develop information on the application of research findings under practical feeding conditions. Fundamental research on which these application studies are based comes from basic research carried on in academic institutions and public experiment stations, frequently supported by grant-in-aid from industry. The procedures employed in the application of research findings in Red Rose Feeds are typical of evaluations and application of other feed manufacturers and are presented here as a case in point—a demonstration by example—of the modus operandi of bridging the gap between discovery and application.



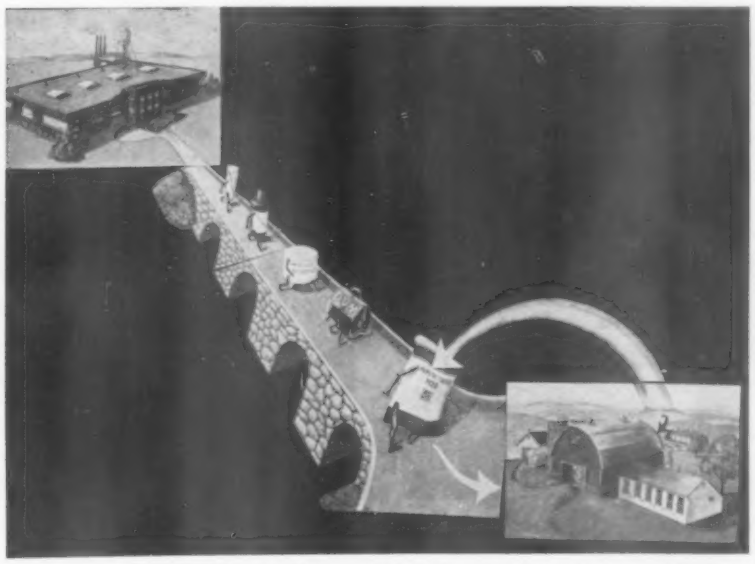
A child would starve on pasture, but a cow converts roughage into milk. The livestock industry is a cushion between prosperity and famine and condenses roughage and manufactured feeds into palatable products for the table.

Energy: Red Rose Broiler Ration provides a high level of available energy from dehulled soybean meal, corn and animal fat; contains added methionine, vitamin K and antioxidants. This ration is the application of basic research first conducted at the University of Connecticut a decade ago on energy levels in broiler feeds. Later, studies at Cornell, Maryland and elsewhere provide additional evidence that the energy level of the feed was the most practical way of

(Continued on page 22)



Farrowing crates, pig brooders and creep-fed pig starter pellets aid in survival and growth of large litters. Pellets help the sow in satisfying the growing appetites of her large family—especially after three or four weeks—when her milk supply decreases. An assist from pellets saves weight loss in the sow and provides more time for recreation which results in eary marketing or rebreeding.



Reducing the application lag from what is known to what is used, manufactured feeds and supplements, along with advances in other professions, bring the benefits of research to the farm in a bag of feed.

A schematic illustration of how the AFMA Nutrition Council translates research from experiment stations into most usable information and distributes this information through the feed industry. In turn, feed application problems are brought to the attention of researchers in land grant colleges.

Around the hog belt in 9 days

what top hog raisers are doing about worms

1 **Albert Koller & Son:** "We think 'Hygromix' is the best thing we've ever had for a swine wormer. Other wormers either are too hard on the pigs or don't get the job done." **Parker, South Dakota.**

2 **Robert M. Hansen:** "Fed 'Hygromix' to 40 pigs up to 60 lbs. last fall. Results led me to feed it to 103 pigs this spring. I carried them on 'Hygromix' to 125 pounds. Not one runt among pigs now on 'Hygromix.' May feed it all the way to market." **Estherville, Iowa.**

3 **Ivan Florschuetz:** "In 20 years of feeding I've never before seen results like those I got with 'Hygromix' feed. By eliminating my worm problem, 'Hygromix' has given me terrific gains on my hogs." **Compton, Illinois.**

4 **Harvey Gittleson:** "I like 'Hygromix better because you automatically get worms before they begin. We used to have to worm twice, and we still didn't get the job done." **Compton, Illinois.**

5 **J. Robert Beatty:** "Wormy hogs seem more subject to lung infections. Our own tests show that 'Hygromix' in feed does the best job of keeping pigs free of worms . . . better than any other product put out yet." **Avon, Illinois.**

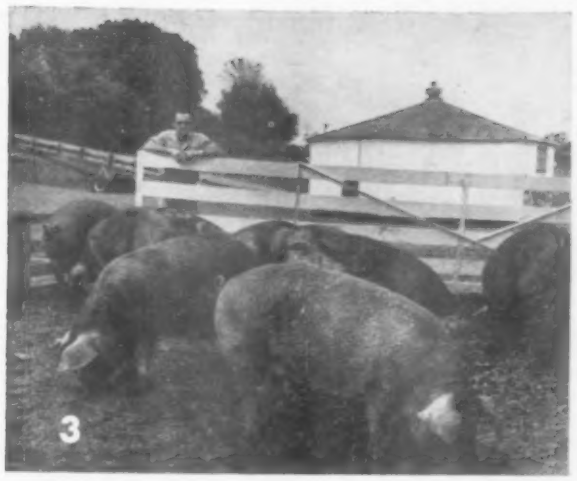
6 **Harold "Hap" Mears:** "We put 275 badly infested pigs on 'Hygromix' rations. After 8 days we found dead worms of all sizes. Checked effectiveness of 'Hygromix' several times with liquid wormer, but no more worms. Pigs just don't have worms when you feed 'Hygromix' properly." **Jefferson, Iowa.**

7 **Herman F. Danekas:** "Feed with 'Hygromix' is a good positive type of worm control that can be used during breeding, gestation, nursing, growing and fattening periods without hazard or toxic effects." **Esmond, Ill.**

8 **Lyle Lovins:** "Fed 'Hygromix' to 144 pigs on concrete. After 70 days checked with one-shot wormer. No worms whatever. We're sure now that 'Hygromix' takes care of our worm problem." **Minier, Illinois.**

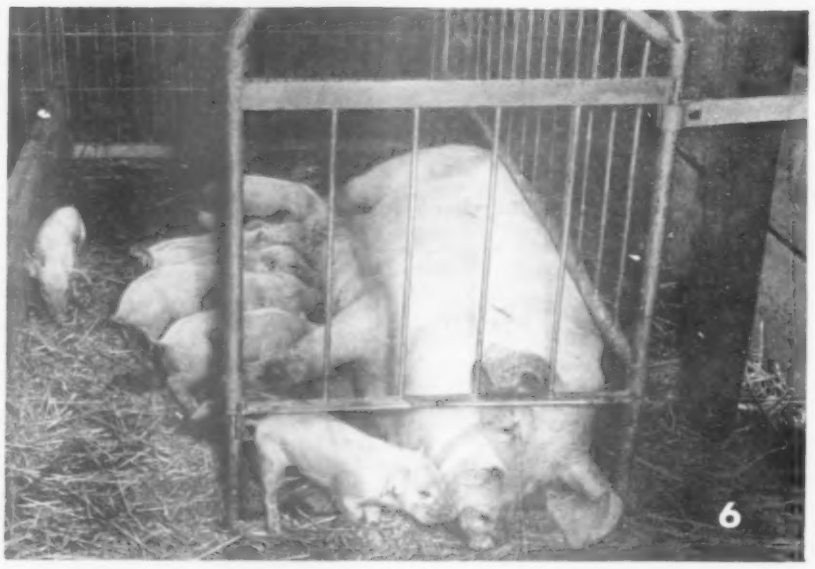
9 **Mr. & Mrs. Richard M. Graber:** "Ran comparison test on two lots of 40 pigs, one on 'Hygromix,' other on same feed without 'Hygromix.' Bunch on 'Hygromix' ran away from others from 40 lbs. on." **Mineral Point, Wisconsin.**

Every farmer interviewed was enthusiastic about this new worm control method. Many had this to say: "It's a mistake to confuse this new method with the old purge-type wormers. Use 'Hygromix' right, according to directions. When you do, you can't help but be happy with it."


3

4

5


6

7

8

9

HYGROMIX
(*S. hygroscopicus* Fermentation Products, Lilly)
Lilly
ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION, INDIANAPOLIS 6, IND.
MAKERS OF 'STILBOSOL' (Diethylstilbestrol Premix, Lilly)
Procaine-Penicillin-G • Vitamin B-12

The Nutrition Council of the American Feed Manufacturers Assn., started in 1941 with nine members, has grown to 86 in 1958, representing 76 feed manufacturers and 12 associations of ingredient suppliers. During the AFMA Golden Convention this year, the council presented dramatic demonstrations of nutrition developments by college and industry scientists, featured as "From Feed to Food" and "Food Comes First." The author of the accompanying article is current chairman of the council.

increasing feed efficiency. As ingredients were selected for the energy they supplied, methionine supplementation was needed, based on research by Du Pont and others. The application of this research has led to increasing use of animal fat in feeds and has drastically reduced the amount of feed necessary to produce a pound of gain in broilers. As a result, field reports of feed conversions of 2.5 lb. feed per pound of gain are common, while five years ago such efficiency was unheard of.

Fiber: Basic research on the effect of energy level of the ration on body conformation permitted the development of Red Rose Pullet Developer in which fiber replaces energy to slow sexual development of growing pullets and retard the deposition of fat, especially in heavy breeds maintained for the production of meat type broilers. In many circumstances, full feeding of a fibrous ration is more practical than limited feeding that results in unequal feed intake and hence unequal development in pullets.

Zinc: Zinc was added to all Red Rose Swine Feeds and Supplements in March, 1957, to provide double protection by the prevention of parakeratosis and improvement of growth rate of pigs. The addition of zinc was based on research from Michigan State University, Alabama, Purdue and Iowa. In our research program we noted slower growth in growing-fattening hogs where mild symptoms of parakeratosis were evident. In 1956, two of 24 pigs on pasture showed symptoms of parakeratosis, while 14 of 16 pigs kept indoors and fed the same ration showed symptoms. The market weight of 16 hogs that at one time exhibited symptoms of parakeratosis averaged 208 lb., while 29 litter mates that had exhibited no symptoms averaged 217 lb. at the same age. Since the addition of zinc to our swine rations, we have consistently obtained better performance in confined rearing than on pasture. Nor, to our knowledge, has any evidence of parakeratosis occurred.

Recent research at Maryland indicates that zinc may be the missing link in the prevention of enlarged hock disorder that has plagued turkey growers and nutritionists for years. In the Maryland trials zinc also improved growth and feathering in broilers and egg shell strength in layers. Confirmatory trials at the Red Rose Research Center are under way and are promising, but the benefits from added zinc look too good to pass up. Accordingly, zinc has been added to all Red Rose chicken and turkey feeds in June, 1958—honoring our point, as bird dog people say, when zinc was added to Red Rose swine feeds in March, 1957.

Cost of adding traces of zinc is small compared to the danger that a deficiency is robbing the feeder of a profit. While costs will vary, in our case the extra investment of zinc amounted to about 2¢ per ton of poultry feeds and about 6¢ per ton for swine feeds with proportionately greater costs for supplements due to great concentration.

Iron: Baby pig anemia is the most common and costly deficiency in swine. In comparing spring and fall litters during the past four years at the Red Rose Research Center, a consistent superiority of fall litters was noted. This now appears to have been caused by fall litters picking up traces of iron from contact with the soil; whereas, spring litters, confined to eight weeks, were denied this opportunity.

In the spring of 1958, control pigs (Nos. 3, 5 and 7) in each of five litters received no injection while their littermates were injected with 100 milligrams of iron (Armidexan) before three days of age. Thereafter, control and injected pigs were on the sow until weaning at eight weeks of age and creep fed Red Rose Pig Starter Pellets.

Injected iron produced 2.6 lb. greater gain at four weeks, 8.5 lb. at eight weeks of age and a most apparent difference in physical appearance. Differences between controls and injected pigs in a single litter were as great as 13 lb.—a dramatic demonstration of the need for iron for prevention of anemia. Since feed offers little promise of furnishing iron early in life, we recommend iron injection of pigs, before three days of age, for prevention of this age-old deficiency problem in swine.

Calcium: Comparison of cage and floor layers over a four-year period demonstrated that cage layers outperformed floor birds but are at the mercy of the caretaker, especially in regard to calcium supplementation. No cases of "cage layer fatigue"—a term some have given to calcium deficiency of caged layers—have developed when cage birds have constant access to a calcium supplement. Here again is an example of using what we know because it was in 1842 (the year this firm was established) that M. Crossat, a French scientist, working with chickens, pigeons, eels and others, first demonstrated the fundamental need for calcium in bone formation. Poultrymen provide floor flocks with an access to calcium, and cage layers deserve the same consideration.

Free and ofttimes fierce competition in the feed industry provides a constant challenge for all to see who can be first in bringing the benefits of research to the users of feed. This has brought about a rapid and widespread application of research that has resulted in increased efficiency of converting feed into food, and in this way the entire nation reaps the benefits of research.

J. H. LEFTWICH & CO., Inc.
BLACKSTRAP MOLASSES
Phone HEmlock 2-8771 Mobile, Ala. P.O. Box 78
Savannah, Ga. Jacksonville, Fla.
New Orleans, La. Corpus Christi, Texas
Tuscaloosa, Ala. Nebraska City, Neb.
Shipments by Rail Tank Car, Truck Transports and Barge

New Cholera-Like Hog Disease Discovered

BERKELEY, CAL.—The discovery of a previously unknown lethal virus disease of swine has been made by a scientist in the Naval Biological Laboratory on the Berkeley campus, University of California. The disease has some of the characteristics of each of two other lethal swine diseases—hog cholera and African swine fever.

The research was performed by Dr. Stewart Madin, assistant scientific director of the laboratory and lecturer in bacteriology on the Berkeley campus. The laboratory is operated by the university on contract with the Office of Naval Research.

Dr. Madin said the disease may be a variant of hog cholera. "If so, it probably has been masquerading as hog cholera among swine herds for a considerable period of time. In the field the condition undoubtedly would be so diagnosed," he explained.

Dr. Madin said the new virus was found during a search for a new vaccine for vesicular exanthema, another serious disease of swine. After growing large amounts of vesicular exanthema virus in kidney tissue cultures of a single hog, the scientist injected the resulting vaccine material into hogs.

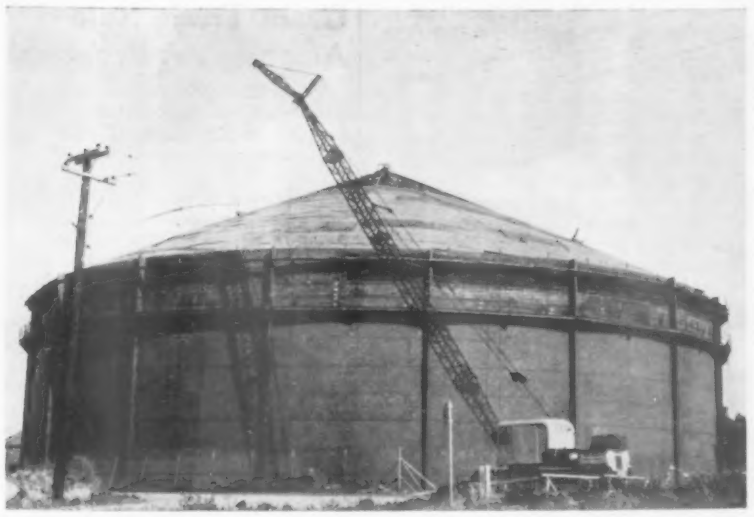
Instead of being protected against vesicular exanthema, the hogs all died of a new disease. A check showed the new virus had been present in the kidney tissue of the hog.

Further studies of the new virus are now in progress at the university.

NEW-CROP BEANS SOLD

MEMPHIS, TENN. — The first truckload of new crop soybeans in Mississippi was sold Aug. 11, a good two weeks ahead of the time expected. The soybeans were sold by the Standard Commission Co., Memphis, for the Delta Brokerage & Warehouse Co., Itta Bena, Miss. The buyer was the Greenville (Miss.) Elevator.

DU PONT
Faster gains on less
Hydan
trademark
write: E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department, Nutrition & Therapy Section, Wilmington, Delaware
Atlanta 8, Ga., 739 W. Peachtree St.
Cleveland 14, Ohio, 1321 Nat'l City Bank Bldg.



GAS TO GRAIN STORAGE—Dannen Mills, Inc., is converting this gas holder of the Gas Service Co. at St. Joseph, Mo., to a storage tank for 1,250,000 bu. wheat. Aeration and heat detection systems have been installed in the tank. The tank was originally 175 ft. high, but it has been cut down so that it is 47.5 ft. high at the eaves and 82 ft. high at the peak. It is 178 ft. in diameter.

Program Announced For Swine Field Day Sept. 9 in Florida

GAINSVILLE, FLA.—The program has been announced for the third annual Swine Field Day Sept. 9 at the University of Florida. It is sponsored by the Florida Agricultural Extension Service in cooperation with the university's animal husbandry and nutrition department.

After registration at 8:30 a.m. in the livestock pavilion, and a welcome address by Dr. M. O. Watkins, director of the extension service, the program will open with a talk, "Swine Outlook," by Dr. T. J. Cunha, head of the animal husbandry and nutrition department.

Following Dr. Cunha's talk there will be tours of the swine research facilities at the university.

Also on the morning program will be a carcass and live animal demonstration by Dr. A. Z. Palmer and Dr. R. L. Reddish, and a question-answer session headed by J. E. Pace.

Talks scheduled on the afternoon agenda, beginning at 1 p.m., are: "Contract Feeding and the Swine Producer," by Dr. C. C. Moxley, department of agricultural economics; "Protein Feeding—What and How," by Dr. G. E. Combs, Jr.; "Feeding on Concrete versus Feeding on Pasture," by Dr. H. D. Wallace; "Influence of Feeding on Reproductive Performance," by Dr. A. C. Warnick; "Selection of Breeding Animals," by Dr. D. L. Wakeman; "The Feeder Pig Problem in Florida," by K. L. Durrance; "Swine Diseases," by Dr. W. R. Pritchard, and "Worming Agents for Swine," by J. M. Vandepopuliere.

A question-answer session will close the program.

Washington Production School Being Planned

SEATTLE — Preliminary program plans have been made for the 1959 Feed Mill Production School sponsored by the Washington State Feed Assn.

The school, held in connection with the association's convention, will be presented Feb. 11-12 at the Leopold Hotel in Bellingham, Wash. It will be a 1½-day school.

Planned as part of the school are several workshop sessions, according to an association bulletin from John G. Wilson, manager. There will be six rotating sessions of 45 minutes each. Subjects to be discussed include: Bulk handling at mill; custom milling; pelleting, high fat and roughages; grinding and mixing; maintenance; bulk delivery to the farm.

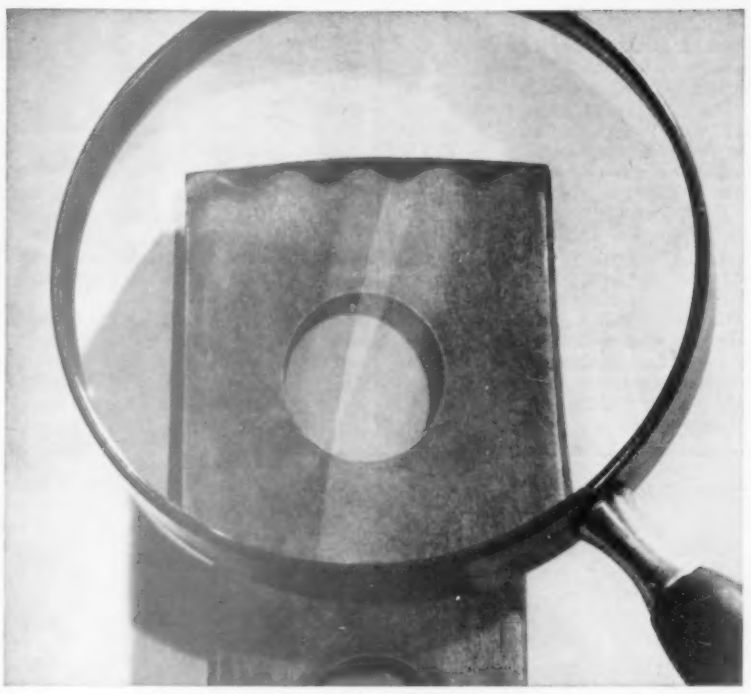
The moderator of each session will give a brief introduction to the subject, and then there will be a question-and-answer period.

GEAPS Pick Dates For Annual Meeting

PORTLAND, ORE.—The 1959 convention of the Grain Elevator & Processing Superintendents will be held April 12-17 in Portland, with the Multnomah Hotel as convention headquarters, according to Kenneth C. Mecklem, Cargill, Inc., Portland, president.

He said a poll of the membership resulted in the April 12-17 dates. Regular monthly meetings are being held in Portland, he said, to lay plans for the convention. The completed program is to be ready by the first of the year.

PACAL



New PACAL Hammers outwear ordinary hard-faced hammers by 25%

Cut your grinding costs with new PACAL Hammers. Serrated-Head* design holds 50% more tungsten-carbide than conventional hammers. PACAL Hammers sharpen as they wear, hold their edge, cut cleaner. Last 25% longer than ordinary hard-faced hammers. You get more hours of quality grinding. You save on replacement costs.

There's a PACAL Hammer for your product and your hammermill. Orders filled promptly from dealer stocks in all parts of the country. Write or call Hammer Division for name of your nearest local dealer. Represented in Canada by Strong-Scott, Ltd.

*PATENT APPLIED FOR

PAPER, CALMENSON & CO.
County Road B & Walnut St., St. Paul 13, Minnesota
Telephone: Midway 6-9456

HAMMERS

LA BUDDE
MILWAUKEE, WIS.
MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

feed with the new, lower-cost source of methionine...

feed supplement

METHIONINE HYDROXY ANALOGUE CALCIUM 90%

Houston 25, Texas, 1100 E. Holcombe Blvd.
Minneapolis 2, Minn., 1207 Foshay Tower
Palo Alto, California, 701 Welch Road
Wynnewood (Phila.), Pa., 308 E. Lancaster Avenue
In Canada: Du Pont Company of Canada (1956) Limited, P. O. Box 660, Montreal, Quebec

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Maryland Poultry Conference for Servicemen Set

COLLEGE PARK, MD.—The program has been announced for the University of Maryland 1958 Poultry Servicemen's Conference Sept. 10-11.

The morning program on the first day will include a talk on "What Servicemen Contribute," by C. E. McCauley, director of feed distribution, Southern States Cooperative, Seaford, Del. "How Can we Motivate the Producer?" is the title of a talk that will be given by Ken F. Warner, professor of extension studies at the University of Maryland.

The remainedr of the morning session will deal with problems in vaccination for Newcastle disease, infectious bronchitis and laryngotracheitis.

Opening the afternoon session will be an address by Dr. Edmund Hoffman, Unity Feed Co., Boston. He will talk on "The Role of Antibiotics in Flock Management Problems." The treatment of intestinal worms will be discussed by Dr. E. E. Wehr, parasitologist with the U.S. Department of Agriculture at the Beltsville, Md., research center.

Other talks will be: "Agriculture and Poultry in Liberia," by Fred L. Helm, Firestone Tire and Rubber Co., Akron, Ohio, and "The Poultry Serviceman's Role Under Mandatory Poultry Inspection," by Dr. Daniel DeCamp, poultry division, USDA.

There will also be group tours and a chicken barbeque dinner. The last item on the first day agenda will be an evening question-answer session moderated by S. A. White, Purina Mills, Delmar, Del.

On Sept. 11 scheduled addresses are "Improving Ventilation in Present Day Poultry Houses," by Prof. H. H. Kauffman, chairman of poultry extension, Pennsylvania State University; "What's Ahead for Eastern Producers?" by Dr. A. William Jasper, director of egg promotion for the Poultry & Egg National Board; "Should We Restrict Feed in Growing Replacement Stock?" by Dr. R. D. Creek, poultry department at the University of Maryland, and "Feeding Practices for Maximum Poultry Meat Production," by Dr. G. F. Combs, poultry department, University of Maryland. A question-answer period will be headed by Dr. C. S. Shaffner, head of the poultry department at the University of Maryland.

The meeting will adjourn at noon, Sept. 11, with the remainder of the day devoted to industry and commercial group meetings.

FEED STORE REMODELS

LOUISVILLE—The St. Matthews (Ky.) Feed & Seed Store, located in a suburb of Louisville, is remodeling to double floor space and add new departments. The firm will have approximately 6,500 sq. ft. of floor space when construction is completed.

Grain Trade Rule Amendment Proposed

WASHINGTON — An amendment to Grain Trade Rule 38 will be recommended to the national trade rules committee at the annual meeting to be held Sept. 8 in St. Louis as part of the Grain & Feed Dealers National Assn. convention, E. R. Warren, general chairman of the committee, has announced.

The rule would be amended to read as follows:

"Unless otherwise specified or agreed to, a buyer is entitled on each car of grain, to one inspection with diversion privilege, free of tariff charge. Any subsequent stop for inspection and/or diversion shall be for buyer's account.

"Buyer is also entitled on each car of grain to one transit privilege (storage and/or processing) via the route available from seller's point of origin, in accordance with the tariff in effect, to the buyer's billed destination.

"Charges lawfully collected by the Rail Carrier accruing from failure of the seller to furnish billing carrying such privileges shall be for account of seller."

Trade rules may be amended by a two-thirds affirmative vote of the membership present at the annual meeting of the members, Mr. Warren announced.

Sprout-Waldron Sends Feed Mill to Spain

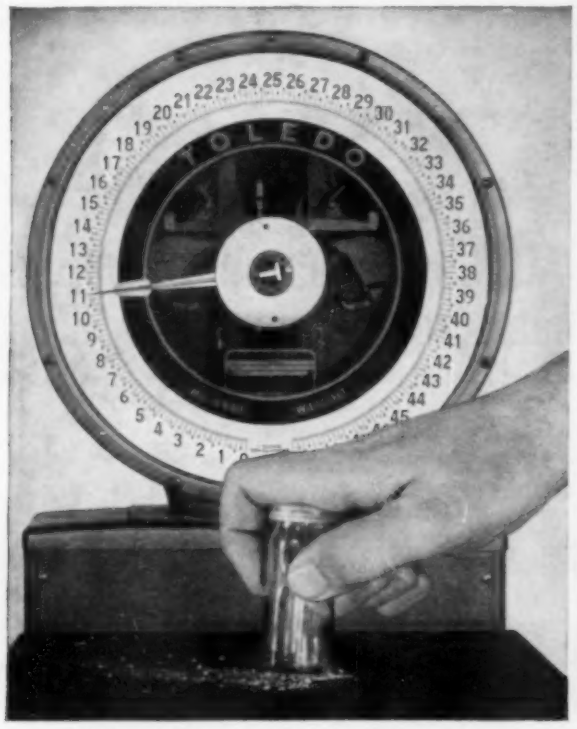
MUNCY, PA. — A complete package feed mill designed by Sprout, Waldron & Co., Muncy, and equipped with Sprout-Waldron machinery is on its way to Auxiliar Agricola Mallorquina S.A. in Palma de Mallorca, Spain. The equipment will be installed in a new concrete building.

The ICA-sponsored shipment includes equipment for the manufacture of mash, pellets, crumbles and molassified feeds for poultry, pigs and dairy cows. It will be used for the manufacture of approximately 25 different formulas, which will use corn meal, bean meal, soybean meal, wheat, bran, fish meal and solubles and various fats as main ingredients.

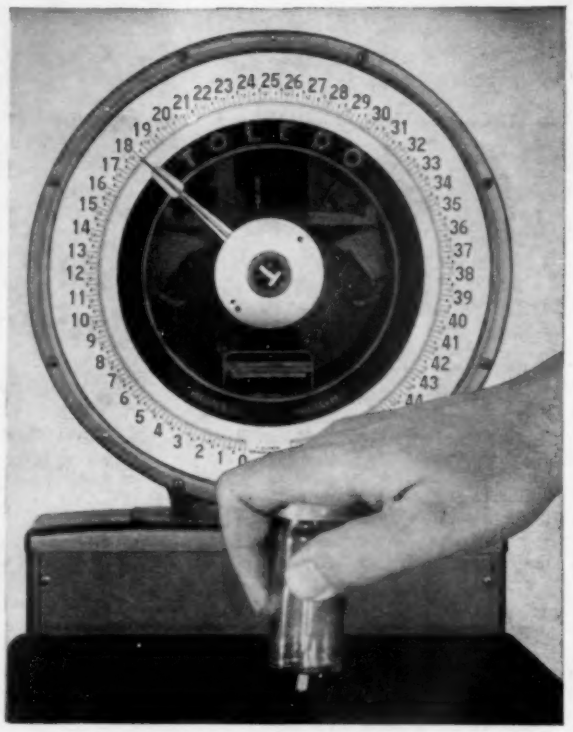
Sprout-Waldron equipment includes a Model 2-FM horizontal mixer, 500-B Jr. Pellet Ace, pellet cooler and crumblizer, Customix molasses mixer and auxiliary units.

RETIRED FEED MAN DIES

ST. PETERSBURG, FLA.—Harold W. Holmes, 67, retired plant superintendent for the Ralston Purina Co. at Buffalo, N.Y., died recently in St. Petersburg. He had moved to St. Petersburg eight years ago.



Without Micro-Cel, feed pellets break up under slight pressure as standard squeeze test shows. Result is more "fines," shipping problems and customer complaints.



Micro-Cel treated pellets stand up under much greater pressures, are actually 33⅓% to 65% harder. Bulk-loaded or bag-packed pellets reach customers in better condition.

NOW–Reduce "fines" in your bulk pellet shipments

with MICRO-CEL

synthetic hydrated calcium silicate

THANKS to new Johns-Manville Micro-Cel®, you can now ship feed pellets in bulk form with far less crumbling, breaking and "fines" before and during transit. As the above demonstration shows, the simple addition of ½ to 1% of Micro-Cel improves pellet hardness by as much as 65%.

Think of what this new advance can mean to you! Pellets in bulk are easier and less costly to handle. They require far less warehousing space. They save on over-all shipping costs, too . . . as much as $4.00 per ton on bag costs. With Micro-Cel added, you and your customers are happier. They get a better product from you, and you get far fewer returns and customer complaints from them.

Extra-fine Micro-Cel is a pure and inert powder with amazing free-flow properties, even at high levels of absorption. It will not impair nutritional values. It can be added to mix or premix without changes in your existing mill equipment. And it enables you to prepare concentrated premixes which can be added to the feed.

It will pay you to check on these amazing advantages of Micro-Cel: **1.** Shipment of fats in dry, powdered form. **2.** Elimination of caking in mash feeds, range cubes, and feed supplements. **3.** Improved pellet hardness (explained above).

For information about your specific application write for literature and a 3-pound sample of the proper grade. Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario.

JOHNS-MANVILLE

100 YEARS OF QUALITY PRODUCTS . . . 1858—1958

Over 54 Years of Dependable Brokerage Service

Established 1904

EDWARD E. SMITH AND CO.

3166 Maple Dr., N.E. Atlanta 5, Ga.

Phone—CEdar 3-1108 TWX—AT-30

SW

FOR THE BEST IN

MOLASSES MIXERS

SPROUT-WALDRON

MUNCY, PENNA.

NEW LIPAMONE SCHEDULE CUTS COSTS 60%

A 60 per cent reduction in the cost of treatment now makes MASS-LIPONIZING even more practical and more profitable for ALL MEAT POULTRY.

BROILERS @ approximately 1¢ per bird
ROASTERS @ approximately 3¢ per bird

AT THE SAME TIME, you will realize all the PROVEN* ADVANTAGES of LIPAMONE in the feed.

- *Top carcass quality – best fat distribution.*
- *Complete safety, simplicity – no stress or shock.*
- *All birds treated – no "misses" – when it's in the feed.*
- *Quiet birds! Picking and cannibalism no problem – even without debeaking.*
- *Excellent weight gains and feed efficiency.*

Sold through leading feed supply outlets in their broiler and roaster finisher feeds.

**Specific data upon request.*

FINISH IN THE MONEY

LIPAMONE®

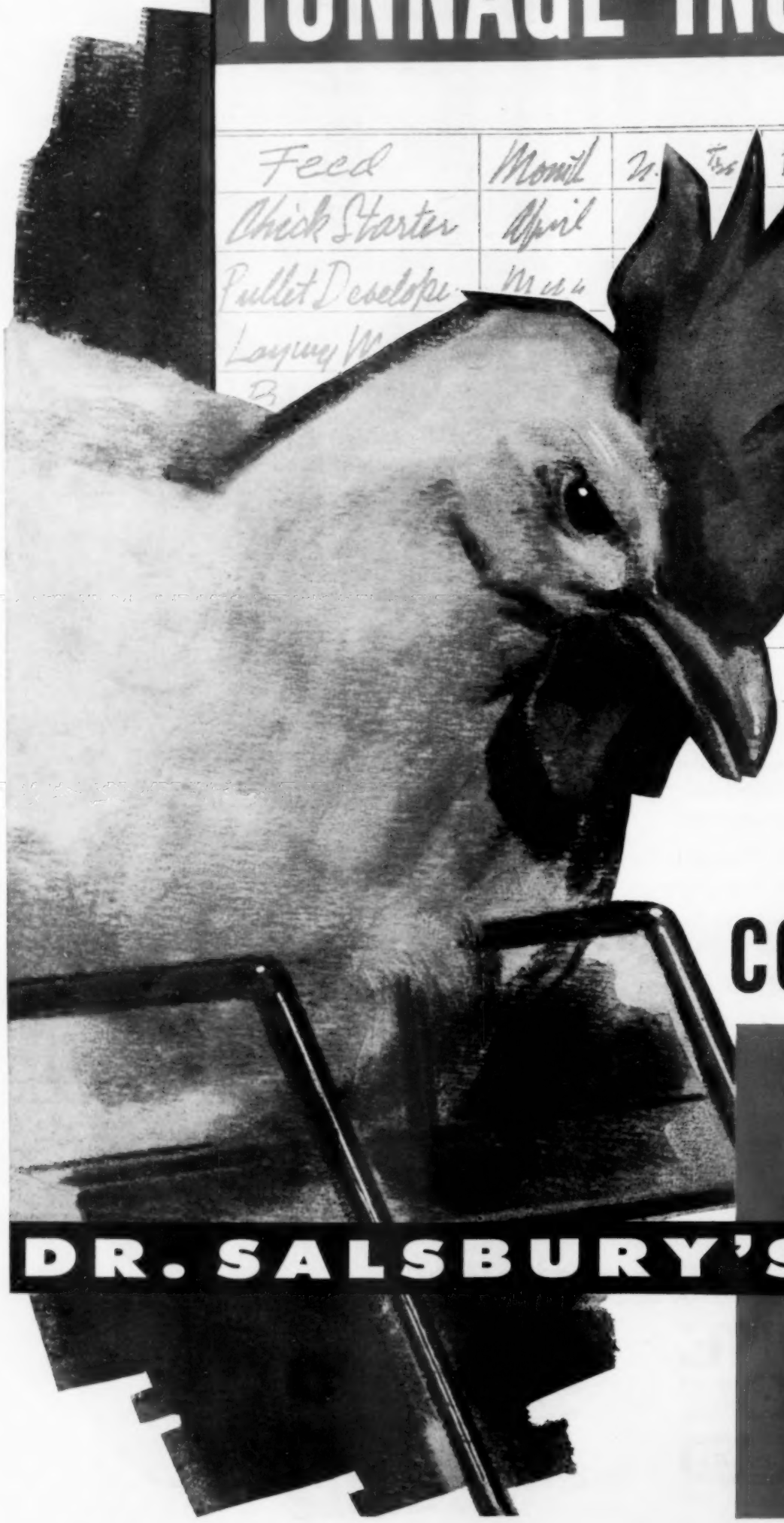
"IT'S IN THE FEED"

Phone, wire, or write for further information

Agricultural Division
WHITE LABORATORIES, INC.
Kenilworth, N. J.

White's

TONNAGE INCREASES



Feed	Month	Tons	Tonnage	Income	%
Chick Starter	April		10	5	10
Pullet Developer	May		63	7½	12
Laying M			112	9	14½
B			122½	12	20
			130	20	25
					30
					1

begin with feed containing

DR. SALSBURY'S 3-

It's been long since proven by both broiler and commercial egg flock raisers that 3-NITRO reduces their costs, increases their profits . . . in fact, it's well established, no other feed additive does so much and costs so little! This means more satisfied customers increased tonnage and reduced field service costs if your poultry feeds contain 3-NITRO.

WRITE FOR THIS AUTHORITATIVE DATA

You're welcome to detailed test data showing how 3-NITRO stimulates faster gains on less feed, promotes extra vitality, improves coloring, reduces flock depletion . . . increases egg production in laying flocks.

FEED PRODUCTS DIVISION

DR. SALSBURY'S LABORATORIES, Charles City, Iowa

Dr. SALSBURY'S

nation-wide service to the feed industry

3-Nitro

THE SUPERIOR ARSENICAL FOR HOG FEEDS TOO!

New reports from Iowa State College indicate that 3-NITRO not only stimulates fast, thrifty gains but puts more solid lean meat on hogs...they gain weight faster with 7 to 9% less backfat...the equivalent of 2 to 3 years of selective breeding! For better hog feeds get acquainted with 3-NITRO. Write, wire or phone for prompt attention to any questions you may have.

Nitro®

POWDER

WHAT'S NEW IN FEEDING?

Putting Research to Work

By Spencer H. Morrison, Ph.D., D.V.M.

Western Section, American Society of Animal Production, Annual Meeting, University of California, Davis Campus, July 13-16, 1958—Part II

Wintering Rations, etc.: Butcher of Utah State University has been interested in comparisons of the responses from cattle and sheep when fed rations of the same composition, and the minimum feed requirements for yearling heifers and ewes during the winter of the first pregnancy. The numbers used were very small, as only 36 ewes and 9 yearling Hereford heifers were selected from larger groups for experimental use.

Within the limitations of the experiment the results at present indicate that: (1) Pregnant yearling ewes and heifers may be wintered on rations considerably lower in energy and protein than commonly recommended; (2) heifers averaging 740 lb. and ewes averaging 97 lb. at the beginning of the wintering period will respond similarly to feed intakes, if similar rations are fed and consumption of feed by sheep is limited to one fifth of the amount fed cattle on a limited feed basis, (3) although various protein levels of 5, 7 and 9% (crude protein basis) caused significant differences in both ewes and heifers with respect to calf, lamb and wool weights, the trends between species of animals were somewhat similar, and (4) poor quality meadow hay may be used as an adequate base for winter feeding of sheep and cattle even with relatively low protein supplementation.

It must be borne in mind, however, that the experimental animals were in average to above average condition, at the start of the experiment, the numbers of animals were small, and the experiment does not answer the question of effect of the various protein and energy intakes on lifetime production.

With the development of pelleting of high quality alfalfa hay in the Pacific Northwest, interest has been aroused in the possibility of using such roughages as possible "protein supplements" for cattle. England and Taylor of Oregon State College report that with weaner calves fed alfalfa pellets as a substitute for either cull peas or soybean oil meal, gains were approximately the same when fed on fattening rations similar in estimated net energy content. Probably due to the somewhat higher protein intake of those animals on the alfalfa pellets, the gains were better than with either soybean meal or cull pea supplemented rations at the wintering level in spite of approximately same estimated net energy intakes. No differences were observed between using soybean meal or cull peas as supplements to a basal 11.1% protein cereal grain mixture either for wintering or fattening rations.

Phosphorus Intakes of Range Brood Cows: Results were reported of a cooperative study on the Squaw Butte-Harney range by Agricultural Research Service, USDA, and Oregon State College covering a period of four years on sagebrush-bunchgrass range supplemented with flood meadow hay fed free choice during the winter. Cows in the experimental group had disodium phosphate and bonemeal available at all times, while both control and experimental groups had free access to salt. The phosphorus intakes were estimated from daily hay consumption records, forage analyses and assumed dry matter intakes of range forages during the summer. The phosphorus supplements resulted in significantly earlier calving dates (July 7 average vs. July 24 average). A slightly higher but non-significant increase in number of calves resulted from the supplemental phosphorus, but no effect was noted on the birth weight and weaning weight of the calves. The workers emphasize the importance of further work on this type of range before critical recommendations can be made.

Energy Sources for Gestating Cows: Roberts and Dyer of Washington State College found that when

STUCK
weighing molasses feed?

Thayer Scales will handle ALL types of feeds with speed and unvarying accuracy

You can fill molasses (feed) in January at 16 bags per minute with a Thayer Scale. You'll get speed and unvarying accuracy *every* month of the year. You'll be able to switch from molasses to alfalfa to pellets to mash instantly. Mills like Pillsbury, OK, Payway, Eastern use Thayers. You could too. The money you may now be wasting in overfilling bags *just an extra ounce* could pay for a new Thayer in a year.

THE Thayer SCALE

BATCHING • FILLING • CHECKING — AUTOMATICALLY BY WEIGHT
AUTOWEIGHTION
THAYER SCALE CORP., 9 THAYER PARK, PEMBROKE, MASS.

Make Your Customers
GOOD Customers . . . all year 'round

SUPREME Brand
Condensed BUTTERMILK
HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
315 South Smedley St. Phila. 3, Pa.

DEHYDRATED ALFALFA MEAL
Animal Fat Treated
Bulk Bagged Meal Pellets
ALFALFA—MOLASSES
Suncured Alfalfa—20% Cane Molasses
ALFA—CANE
Dehydrated Alfalfa - Animal Fat - Cane Molasses
ROHLOFF BROS., INC.
RFD GRAYTOWN, OHIO

pregnant Hereford beef cattle received equal suboptimal energy intakes from 10 lb. of roughage (alfalfa hay, wheat straw or various combinations thereof), and varying levels of concentrates, no significant differences were observed between rations for calf birth weights and for first 30 days gain after birth. Apparently when energy is limited, wheat straw may serve as a valuable source of energy when properly supplemented with concentrates.

Supplementary Vitamin A and BHT for Cattle: Page and associates of the University of Arizona reported that 20 yearling Hereford steers were divided into four groups and fed the following salt mixes free choice: (1) salt, (2) salt-BHT, (3) Salt-Vitamin A, and (4) salt-BHT-vitamin A. The addition of BHT did not influence liver vitamin A retention or vitamin A utilization. Adding vitamin A to the salt mixture proved a poor means of insuring adequate A levels of the steers as meaasured by liver and blood levels. The same workers also showed that when normal and vitamin A deficient steers were fed rations with and without added tallow (10% tallow), the addition of the tallow tended to depress carotene utilization.

Spayed vs. Open Heifers in the Feedlot: The Wyoming workers showed that spayed heifers gained an average of 1.79 lb. per day during a 199-day feeding period compared with 1.96 lb. per day for open heifers. Although the spayed heifers graded slightly higher and showed more uniformity, the differences in daily gains were not significant due to the great variability of gains within the various groups. Other workers have demonstrated usually, that spayed heifers give similar results to these when compared with open heifers. No damage to the loin area was observed as a result of the spaying procedure.

Pelleting Roughages: Dyer of Washington State fed various levels of chopped alfalfa hay and wheat straw along with pelleted grain-protein concentrate. The pelleted concentrate was fed to furnish 70% of total feed intake while the roughages furnished the balance. When wheat straw replaced fully the alfalfa hay in the ration, rates of gain were reduced by 0.59 lb. daily per animal, and efficiency of feed utilization was reduced by 24%. This means that in fattening animals as opposed to wintering animals, type of roughage is important, even if protein adjustments are made in the grain-concentrate ration. When an all-pelleted ration comprising 10% wheat straw and 20% alfalfa hay, was compared with the same ration fed as chopped roughage, daily gains were significantly faster and could not be explained in terms of energy intake or digestibility of dry matter. Steers fed the pelleted ration free choice made significantly faster gains also than those fed the same ration hand fed.

Lambs: Erwin and associates of the University of Arizona showed that implanted ewe feeder lambs (6 mg. of stilbestrol) gained as rapidly and similarly to implanted wether lambs. In the same experiment cotton gin trash gave as good results in terms of rate of gain as did alfalfa hay; however, as the level of gin trash increased and the levels of concentrates decreased, increased feed consumption was noted. The data suggest that within economic limits gin trash can be fed for similar rates of gain with varying levels of concentrates.

Esplin of Colorado State University told of results with various supplements to corn silage for fattening lambs. His experiments demonstrated the following:

(1) When Purdue Supplement A was compared with various protein supplements (soybean oil meal, cottonseed oil meal, linseed meal) at the same approximate crude protein levels, gains were nearly equal, although at lower supplement levels, protein supplements were more efficient.

(2) Corn silage without protein supplementation does not produce satisfactory results. Little difference was demonstrated between the gains produced by the various protein supplements, but cottonseed was less efficient than either soybean oil meal or linseed oil meal. A special 44% protein urea pellet gave smaller gains and less efficient results than the other protein supplements.

(3) One to two pounds of alfalfa hay can replace 0.25 lb. linseed pellets in corn silage fattening rations. Supplementation of 0.25 lb. linseed pellets with either 0.25 to 0.75 lb. dehydrated alfalfa or 0.50 to 1.0 lb. of alfalfa hay increased the efficiency and gains of the corn silage ration.

(4) Ground limestone fed at 0.02 lb. per lamb per day increased gains and feed efficiency when fed with corn silage and protein supplement. Cobalt did not increase gains when fed with alfalfa hay and corn silage.

Fox and Oldfield of Oregon State demonstrated that when ewes were placed on red clover pasture for 17 days before and 51 days after breeding, considerably longer lambing periods were shown than for ewes fed either alfalfa or red clover hay during the same period.

Swine: The University of Alberta

This is a money machine
MAKING MONEY FOR YOU

It's a fact! This modern mixing machine *does* help you make money, because it is typical of the modern equipment Wilson uses to assure the uniform high quality of Red W Brand Protein concentrates and Red W Brand Vitagen Feeding Fat. This means you know exactly what you're adding when you put these fine products to work for you.

And your customers know about this dependability, too. It keeps them coming to you for feeds—year after year. Because your high energy feeds are better with Wilson Red W Brand, you'll be able to count on profitable repeat business!

Animal Protein Concentrates and Vitagen Feeding Fat

The BEST Ingredients Make BETTER Feeds

RED W BRAND 50% Meat & Bone Scraps
RED W BRAND 60% Digester Tankage
RED W BRAND Special Prepared Bone Meal (70% Bone Phosphate of Lime—Min.)
RED W BRAND Vitagen Feeding Fat

Write or telephone for quotations on any quantity you need!

WILSON & CO., INC. CHICAGO • CEDAR RAPIDS • KANSAS CITY • OKLAHOMA CITY
OMAHA • LOS ANGELES • DENVER • ALBERT LEA • MEMPHIS

Marion MIXERS
ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag! One mixer For All Your Mixing Needs. Mixes Both Dry and Molasses Feed.
SEND FOR FREE LITERATURE:
RAPIDS MACHINERY CO.
887 11th Street Marion, Iowa

Ask for it by name

★ More protein
★ More Vitamin-B¹
★ Solvent Extracted Meal...Pellets ...or Grits

Minnesota Linseed Oil Company
Minneapolis 21, Minnesota

Minnesota SOLVENT EXTRACTED LINSEED MEAL

Water soluble
Rapidly absorbed
Fast, effective protection against hemorrhagic disease
Economical
Completely stable potency

*U.S. Patents 2,331,808 & 2,367,302

Dept. FS-823
Please rush complete information on Hetrogen K and latest reports on Vitamin K research.
Firm Name
Individual
Address

Hetrogen K is available as an easy to use premix and as a free flowing concentrate. Recommended for medication of drinking water. For complete information, write or call collect:

HETEROCHEMICAL CORPORATION, 111 E. Hawthorne Avenue, Valley Stream, Long Island, N. Y. • LOcust 1-8225

Yes!

He's looking for some of your dog food made with our complete dog food cereals

★ TOASTED CORN FLAKES ★ KIBBLED CORN
★ TOASTED WHEAT FLAKES ★ KIBBLED WHEAT
★ CORN GRANULES ★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

Carloads — Truckloads — LCL — LTL

LAUHOFF GRAIN COMPANY

PHONE 1800 — *Cereals of Quality Since 1862* — Danville, Illinois — TELETYPE 8261

CARGILL

Cargill CREATIVE PROCESSING

CREATIVE PROCESSORS OF FARM PRODUCTS

USED THE WORLD OVER

MINNEAPOLIS SEWING MACHINES

MODEL CV-100

HEAVY DUTY CONVEYOR

CLOSES ALL BAGS

• PAPER • COTTON • BURLAP

A BIG MACHINE FOR DOING A BIG JOB . . . the Model CV-100 is designed for heavy duty, all purpose work. The sewing head is quickly adjusted vertically to close any size bag up to 48″. Sews securely any weight bag wthout adjusting, with a standard two-thread chain stitch.

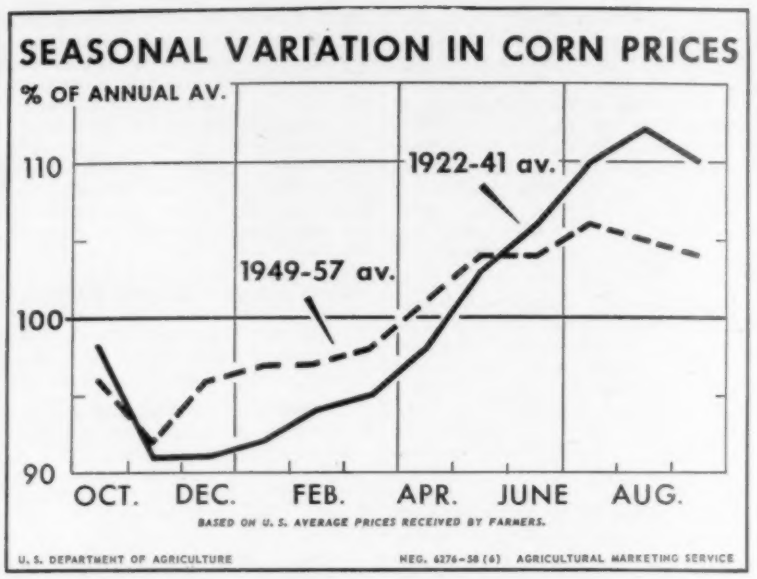
Conveyor measures six feet from center to center of pulleys and is powered with a ½ H.P. heavy duty gear head motor and chain reduction. Has built-in belt tightener.

Easy to use and economical to operate, Minneapolis Sewing Machines will keep your labor costs down and your plant efficiency up.

Write today for full information
There's a Minneapolis Sewing Machine for every size bag closing operation.

MINNEAPOLIS SEWING MACHINE CO.

Dept. G-59 — 5865 Osseo Road — Minneapolis 12, Minn.



PRE-WAR, POST-WAR TRENDS—Corn prices normally reach a seasonal low when the crop is harvested in the fall, then advance during the marketing year to reach a high in July or August. In the years since World War II, the seasonal swing in corn prices has not been as great as before the war. The U.S. Department of Agriculture also points out that the seasonal decline and the seasonal rise have come a little earlier in the marketing year than before the war. Large stocks of corn owned by the CCC in recent years and more uniform production appear to be major factors lending more stability to corn prices, USDA observers state.

workers, Bowland and Berg, found that by restricting pigs to consuming only what can be eaten in one one-hour period daily or two one-hour periods daily, better carcasses, particularly in terms of backfat thickness, were produced than when pigs were self-fed. The pigs fed only once daily did not gain sufficiently fast to offer a practical method of improving carcass quality at economical cost. The twice-a-day plan may offer some merits since the pigs gained only slightly slower than full-fed pigs (1.66 lb. vs. 1.82 lb. daily) and were considerably more efficient in doing so (314 lb. feed per 100 lb. gain vs. 348 lb. feed per 100 lb. gain). A greater benefit will apparently result if twice-a-day feeding is used only with pigs of relatively low quality and with barrows, particularly, according to these workers.

Flower and associates of Montana State College compared a basal barley and alfalfa self-fed gestation-lactation ration (50% ground alfalfa, 48.5% ground barley, and 1.5% mineral mix) with a supplemented ration (50% ground alfalfa, 38.5% ground barley, 1.5% mineral mix, 5% meat meal and 5% soybean meal). In spite of the higher protein consumption of the supplemented sows and a slight trend for greater production with the supplements, the two treatments were virtually no different in results.

Beacon Announces New Poultry Handbook

CAYUGA, N.Y.—The Beacon Milling Co. has announced publication of its 23rd edition of "Profitable Poultry Management," a 264-page handbook for poultry producers.

The new book, which contains extensive discussion of a wide range of topics concerned with poultry production, covers both layer and broiler operations, and includes detailed sections on nutrition. The authors, members of Beacon's research staff, say the 1958 edition is intended to be an every-day reference and handbook which will supplement the efforts of Beacon advisors in helping producers achieve more efficient poultry production.

The company says this book as well as others of a similar nature, are free inside Beacon's distributing area, and can be secured for a small charge to those outside the distribution area, by contacting Beacon's extension service department in Cayuga.

Kansas Seed Dealers Attend Convention

WICHITA, KANSAS — More than 200 Kansas Seed Dealers attending their 12th annual summer convention at Wichita recently were commended for their efforts to know the federal seed laws and put them into practice.

The Federal Seed Act was discussed by W. A. Davidson, chief of the seed branch, U.S. Department of Agriculture, Washington, D.C., in conjunction with W. R. Crispin, marketing specialist, seed branch, USDA, Kansas City.

Mr. Davidson said "more than 25% of the seed was not correctly labeled when this act went into effect in 1940. During the past year the violations have dropped to 7%." Mr. Crispin said violations "were mostly in labeling germination, noxious weed content and purity factor." He explained the basic purpose of the act is to establish standards of purity for imported seeds.

Raymond H. Sawyer, Earl May Seed Co., Shenandoah, Iowa, spoke on "The Seedman's Responsibility in Selling Farm Seed." He said a dealer's responsibility does not end in a sale; he must also find out if the seed proved satisfactory.

"Building a Sound Program for Credit Control" was the subject presented by Sanford D. Wise, Ralston Purina Co., St. Louis.

The luncheon speaker was L. L. Stirland, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., who urged the dealers to set their sights for a higher operating return.

SW

FOR THE BEST IN FEED

SCALPERS

SPROUT-WALDRON

MUNCY, PENNA.

SERVICE BULLETIN for members of the feed & poultry industries

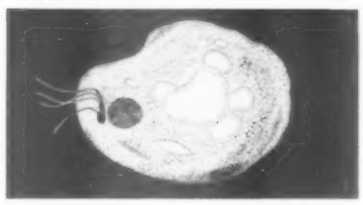
Blackhead in turkeys

(Infectious Enterohepatitis, Histomoniasis)

Blackhead, one of the most serious and costly diseases of turkeys, is caused by the protozoan parasite, *Histomonas meleagridis.*

HOW IS BLACKHEAD TRANSMITTED?

There are three possible routes by which the blackhead organisms reach susceptible birds.



1. Ingestion of infected, embryonated eggs of the cecal worm—*Heterakis gallinae* (under favorable conditions, cecal worm eggs are capable of surviving in the soil, and transmitting the blackhead organisms for periods up to 36 months);
2. Fecal contamination of feed and water supplies by infected birds or asymptomatic carriers—turkeys or chickens (Histomonads usually will not survive for more than 24 hours without the "protection" afforded by *Heterakis gallinae* eggs);
3. Carry-over of infected cecal worm eggs from one farm to another by insect vectors, by English sparrows, starlings, robins, and other birds, and by mechanical means.

The cecal worm is considered the primary source of blackhead infection. Some pathologists believe that the damage caused by these worms to the cecal wall may, in fact, help initiate the infection.

WHAT ARE THE SYMPTOMS OF BLACKHEAD DISEASE?

Few diseases, including blackhead, can be diagnosed on the basis of symptoms alone. Even the so-called "classical" signs of this disease such as darkening of the head parts and the passing of loose, watery, sulfur-colored droppings may sometimes be misleading. Symptoms that may be observed include loss of appetite, droopiness, weakness, and a marked loss of weight. The mortality rate ranges from 25 to 30 per cent but may go as high as 50 to 100 per cent in some untreated flocks.

WHAT ARE THE POSTMORTEM FINDINGS?

Although blackhead lesions are quite characteristic, a microscopic examination of intestinal scrapings is recommended to confirm the diagnosis and eliminate the possibility of mixed infection with *Hexamita meleagridis.* Postmortem findings are usually confined to the ceca and liver. The cecal walls, where most of the damage is evident, are swollen, ulcerated, and filled with foul-smelling, caseous, greenish-white cores. The cores are occasionally streaked with blood. Ulcers occasionally perforate the cecal wall and peritonitis results. (The lining over the intestines and the abdominal wall (peritoneum) and the air sacs may be thick and yellow, the lesions resembling those associated with air sac infection.)

From the ceca the histomonads enter the bloodstream and are carried to the liver. The lesions in this organ are in the form of more-or-less circular depressions, yellowish-green in color and approximately $\frac{1}{2}$ inch in diameter.

ARE RECOVERED BIRDS IMMUNE TO SUBSEQUENT ATTACKS?

Experimental work by USDA research personnel suggests that rectal inoculation of a nonpathogenic strain of blackhead organism may confer immunity against disease-producing strains of this parasite in three to six weeks. *However, under field conditions there is little or no evidence that mild, moderate or severe infections confer any appreciable degree of immunity against future outbreaks.* For this reason prophylactic measures against blackhead losses are indicated from the time poults are placed on litter until they are ready for market.

HOW MAY BLACKHEAD BE TREATED?

In selecting anti-blackhead drugs two factors must be considered: (1) the drug must be highly effective against the protozoan parasites; and (2) it must be safe to use with no interference with *feed consumption, normal growth, sexual maturity,* subsequent egg production, fertility and hatchability.

HEPZIDE,* a water-soluble form of nithiazide, meets these two criteria—safety and effectiveness—in checking blackhead mortality in two to four days. Flocks treated with HEPZIDE continue to eat and drink and are usually back to normal in less than a week.

WHAT PREVENTIVE MEASURES CAN BE RECOMMENDED?

Blackhead prophylactic programs should have as a primary objective the reduction of exposure to the infected, embryonated eggs of the cecal worm. Preventive measures include the use of wire platforms for feed and water containers; segregation of turkey and chicken enterprises; range rotation with grazing by turkey flocks limited to once every two or three years (or moving birds on range to fresh grass every other week); avoiding the spreading of turkey or chicken droppings on turkey grazing areas; raising poults on wire covered or slatted platforms; and the periodic use of phenothiazine in an attempt to reduce the number of cecal worms in the environment.

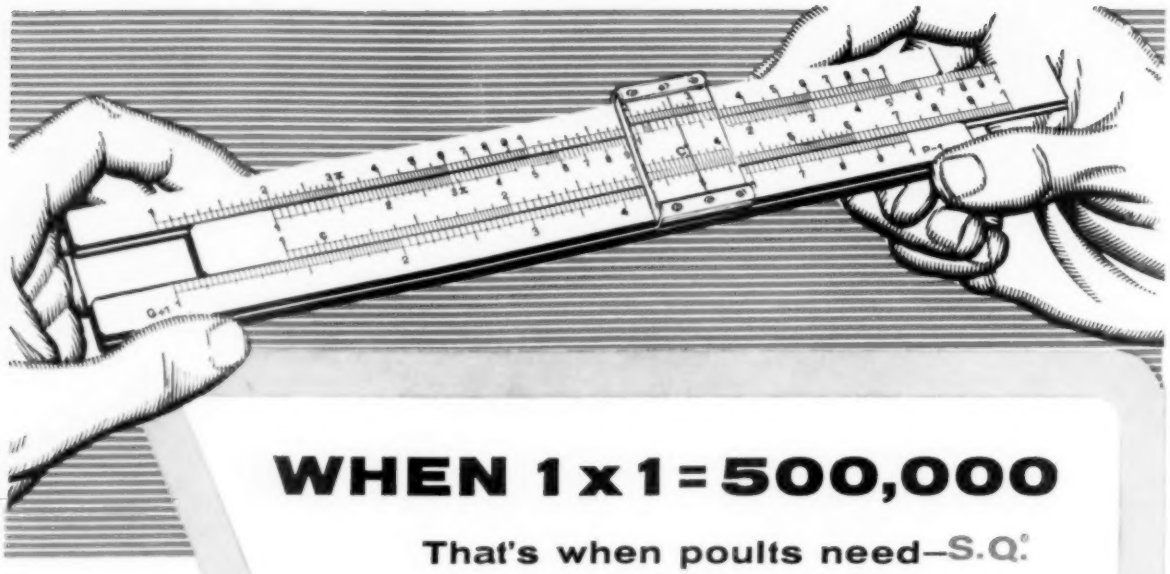
Unfortunately, none of these measures, alone or in combination, offers complete protection against blackhead tissue damage and mortality. The continuous use of low levels of *palatable* and *nontoxic* anti-histomonad drugs, such as HEPZIDE, in the rations of young and growing poults does provide effective protection against blackhead losses. Turkey feeds medicated with HEPZIDE are readily consumed. Poults continue to eat and grow with no setbacks in sexual maturity, subsequent egg production, fertility or hatchability. Except under rare conditions—when feed consumption falls in the presence of other diseases or stress conditions—low levels of HEPZIDE will provide continuous protection against blackhead and virtually eliminate blackhead mortality.*

*HEPZIDE ALSO IS EFFECTIVE IN THE TREATMENT AND PREVENTION OF HEXAMITIASIS IN TURKEY POULTS.

Prepared for members of the feed and poultry industries in the interest of poultry health. Merck & Co., Inc., Chemical Division, Rahway, New Jersey. Reprints of this article, and others in the series of Service Bulletins, are available on request.

8-7-58 A-AG-102-06 PRINTED IN U.S.A.

©MERCK & CO., INC. ®MERCK & CO., INC. FOR NITHIAZIDE.



WHEN 1 x 1 = 500,000

That's when poults need—S.Q.® for protection against coccidiosis

One sick poult can rapidly infect an entire flock with coccidiosis. A single protozoan parasite before the completion of its life cycle will have produced *one-half million* oocyst offspring. *And, one sick poult may pass from 50-60 million oocysts during the course of its illness.*

With such a rapid build-up of organisms it is easy to see how one sick poult can rapidly spread the disease to an entire brood.

S.Q.—the most effective coccidiostat you can recommend

S.Q., continuously fed to poults from day-old until they are 8-12 weeks of age, will protect them against the profit-draining dangers of coccidiosis "breaks". This low-cost protection is a practical measure—even at times of low coccidial contamination. Subclinical infections, for example, with no apparent symptoms, may seriously affect weight gains and feed conversion. A damaged intestinal lining, regardless of the size of the lesions, cannot function as efficiently as a healthy intestinal tract.

A feeding program with S.Q. (Sulfaquinoxaline) will provide your turkey growers with maximum protection against *all* damaging species of turkey coccidia. A program that will more than pay for itself in increased weight gains, improved feed conversion ratios, and a reduction in mortality and cull birds.

S.Q. quickly controls outbreaks

Should a coccidiosis outbreak occur, in poults not receiving S.Q. protection, the prompt use of Sulfaquinoxaline, at therapeutic levels, will quickly curtail losses—help keep poults on feed until the condition is under control.

S.Q. is the only drug of its kind effective more than 48 hours after the coccidial infection has started. S.Q. works best during the 72-96 hour period when coccidia are most vulnerable to medication. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

BLACKHEAD a problem in your area? Why not recommend HEPZIDE® – a patented product of Merck–for *safe* control of Blackhead *and* Hexamitiasis.

If the feeding programs of your accounts call for the use of a growth-promoting, disease-reducing antibiotic supplement, be sure to check the advantages of low-cost dual action PRO-STREP®.

®Trademark of Merck & Co., Inc., for its brand of nithiazide
®Merck brand for an antibiotic feed supplement

Research and Production for Better Poultry Health and Nutrition

MERCK

S.Q.®—a product of MERCK
with THE MERCK MARGIN OF SURETY

Merck & Co., Inc., Chemical Division, Rahway, New Jersey

©Merck & Co., Inc.
®Merck Brand for an antibiotic feed supplement

My neighbor informed me proudly that her fifth grader had made the honor roll this month. Not to be outdone, and ignorant of the fact that the honor roll includes children only from the third grade through the eighth, I asked our six-year-old Marian if she, too, had made the honor roll this month.

"Why, mama," she replied solemnly, "we have no honor in the first grade."

◆ ◆ ◆

On my list of New Year's resolutions was: "Be more patient with my son, Tom. No matter how irritating he is, remember that he is only 16 and going through an exasperating period of adolescence."

Imagine my feeling when, quite by accident, I came across Tom's New Year's resolutions and saw at the head of the list: "Try to be more patient with Dad."

◆ ◆ ◆

Two little boys, in from the country for a visit to their grandmother, wandered down the street to inspect the brand-new school that was just being finished. They found two electricians working in one of the rooms.

"Whatcha doin'?" inquired one of the little visitors.

"We're just putting in the new electric switches, sonny," replied one of the workmen.

"Gosh," said the other boy, after a pause, "I'm sure glad we still got our old country school."

◆ ◆ ◆

A man of Scottish descent was attracting much attention in the hotel lobby with his tales of accomplishments.

"Well, now," said an Englishman at last, "suppose you tell us something you cannot do and I will undertake to do it."

"Thank ye," replied the Scot, "I canna pay my bill here."

◆ ◆ ◆

Prisoner to fellow inmate: "I got caught making big money—about a quarter of an inch too big."

Named Superintendent

BUFFALO, N.Y.—Spencer Kellogg & Sons, Inc., Buffalo, has announced the appointment of James S. Williams as general superintendent. He will be in charge of production of the company's eight plants. Mr. Williams joined the company in 1937 at the Edgewater, N.J., mill as a chemical engineer. He later became superintendent of the shortening department and then of the refinery. In 1947, he was advanced to works manager of the firm's Chicago mill. He was transferred to the administrative offices of the company in 1955 and became staff engineer of the production division.

FEED MILL GOING UP

MIDDLEBURY, IND.—Completion of a new feed mill for the Middlebury Grain Co. is expected by fall, the company announces. Another addition is planned next spring. The site of the old mill will be graded for a parking area.

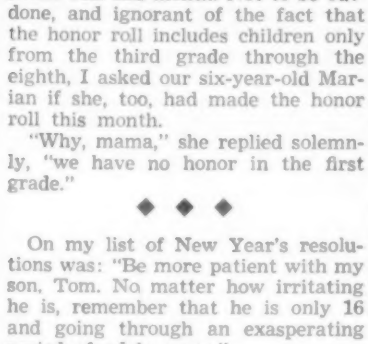
SUNSET FEED & GRAIN CO., INC.

PHONE CLEV. 2938 — 805 Dun Building, Buffalo 2, N.Y. — TWX BU 71

FEED JOBBERS
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED



- Tastes better than sugar or ordinary saccharin to hogs
- Cuts costs 75% replacing sugar
- Appetite appealing aroma and taste
- Powerful antioxidant action—guards vital nutrients

Write for "taste-test" sample

SUCRO FLAVOR

PRODUCT OF
FLAVOR CORPORATION OF AMERICA
3037 N. Clark Street
Chicago 14, Illinois

Your protection assured by our laboratory control

Lime Crest TRADE MARK BRAND

Rigid laboratory control is not just a hobby! Nor is it a luxury. It is an absolute necessity for the feed manufacturer who wants to be certain that his feeds contain what his nutritionist says they should contain.

Lime Crest trace-mineral pre-mixes are made under rigid laboratory control. You can use them with full assurance that they will always put into your feeds what they are supposed to put there. *You* are protected by *our* laboratory control . . . and our research.

LIME CREST TRACE-MINERAL PRE-MIXES

Made by LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
World's Largest Producer of Crystalline Calcite Products

CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

CONVENTION CALENDAR

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

Oct. 16-17—Michigan Feed & Grain Dealers Assn., Fall Conference; Kellogg Center, Michigan State University, East Lansing; sec., Nevels Pearson, P.O. Box 472, East Lansing, Mich.

1959

Jan. 6-8—National Turkey Federation; Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council, exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

• • •

Aug. 24-26—National Hay Assn.; Sherman Hotel, Chicago; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Aug. 25-28—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; chm., J. H. Massey, Extension Poultryman, University of Georgia, Athens, Ga.

Sept. 1—Minnesota Swine Feeders Day, St. Paul Campus, University of Minnesota; chm., Dr. Lester Hanson, Animal Husbandry Department, University of Minnesota, St. Paul, Minn.

Sept. 5—Ohio Swine Day; Ohio Agricultural Experiment Station, Wooster, Ohio; chm., Dr. L. L. Rummell.

Sept. 5—Missouri Swine Day; University of Missouri, Columbia; Dr. Leland Tribble, Animal Husbandry Dept.

Sept. 7-9—Grain & Feed Dealers National Assn., Sheraton-Jefferson Hotel, St. Louis, Mo.; exec. v.p. Alvin E. Oliver, 600 Folger Bldg., Washington 5, D.C.

Sept. 7-9—Louisiana Poultry Improvement Assn.; Jung Hotel, New Orleans, La.; sec., Clyde Ingram, University Station, Baton Rouge, La.

Sept. 8-9—Minnesota Animal Nutrition and Health Short Course; University of Minnesota, St. Paul; chm., Dr. C. L. Cole, Dairy Husbandry Dept.

Sept. 10-11 — Maryland Poultry Servicemen's Conference; University of Maryland, College Park, Md.; chm., W. R. Rice, Poultry Department, University of Maryland.

Sept. 11-12—Pet Food Institute; Drake Hotel, Chicago; pres., Henry Bucklin, 332 S. Michigan Ave., Chicago, Ill.

Sept. 12 — Iowa Conference for Feed Salesmen and Dealers (formerly Iowa Nutrition Conference) Iowa State College, Ames, Iowa; chm., Dr. Walter Woods, Animal Husbandry Department.

Sept. 17-19—National Feed Ingredients Assn., Congress Hotel, Chicago, Ill.; sec., Peter W. Jansa, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 18-19 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville, Ark.; chm., Prof. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Sept. 21-30—World's Poultry Congress; Mexico City, Mexico; sec., Edward Karpoff, Agricultural Marketing Service, USDA, Washington 25, D.C.

Sept. 23-24—Iowa Poultry Hatchery Assn.; Veterans Memorial Auditorium, Des Moines, Iowa; sec., LeRoy Kruskop, 409½ Douglas Ave., Ames, Iowa.

Sept. 24 — Beef-Grassland Field Day; Rosemount Agricultural Experiment Station, University of Minnesota, chm., Harold Swanson, Information Service, Institute of Agriculture, University of Minnesota, St. Paul, Minn.

Sept. 25-27—Pennsylvania Millers & Feed Dealers Assn.; Penn-Sheraton Hotel, Pittsburgh, Pa.; sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

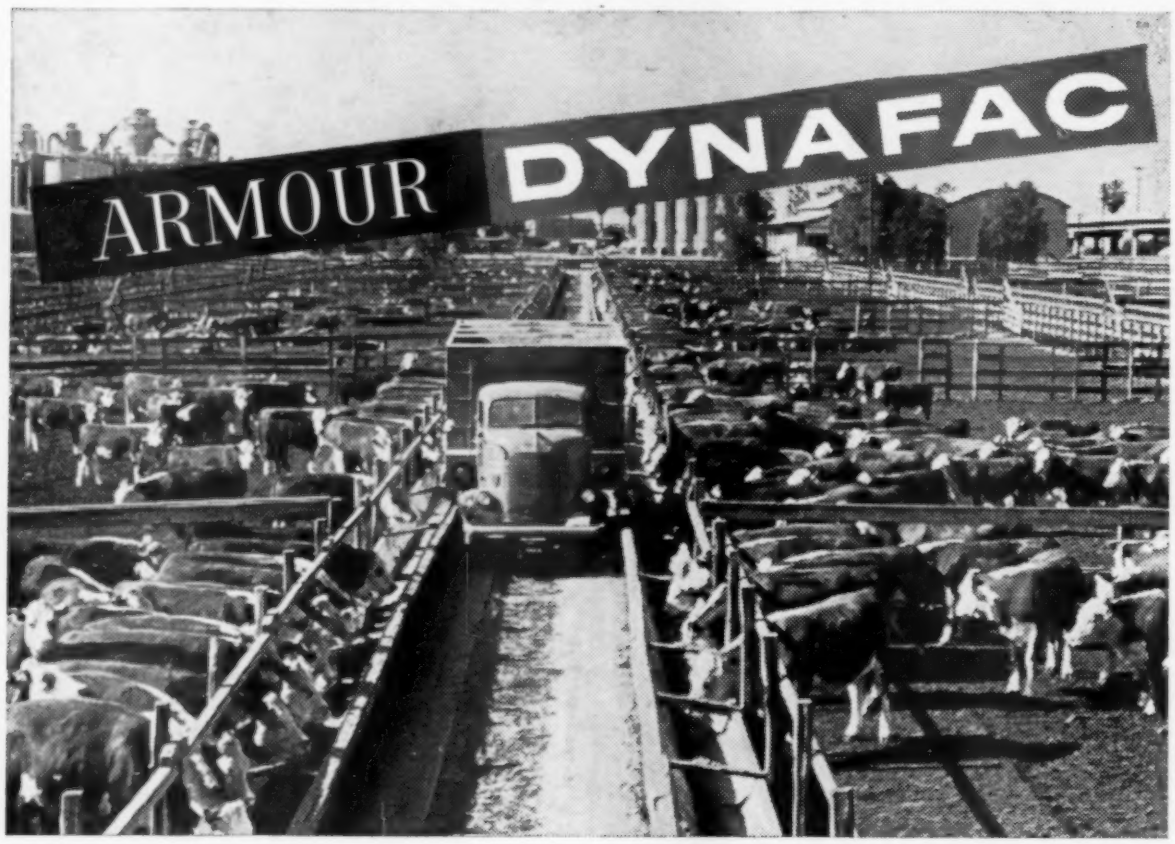
Sept. 29-30—Colorado Feed Conference; Colorado State University, Ft. Collins; chm., Dr. L. E. Washburn, Animal Industry Dept.

Oct. 2 — Nebraska Feeders Day, North Platte Experiment Station, North Platte, Neb.; Animal Husbandry Department, University of Nebraska, Lincoln.

Oct. 6-7—Seventh Region National Renderers Assn.; Sheraton-Jefferson Hotel, St. Louis, Mo.; sec., R. G. Day, Tulsa Rendering Co., Collinsville, Okla.

Oct. 7-9 — Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Oct. 8-10—Texas Nutrition Conference; Texas Agricultural and Mechanical College, College Station,



THE WESTERN FEEDLOTS REPORT . . .

"FROM A FASTER START TO A FINER FINISH,

FEED 'EM DYNAFAC!"

"You can almost see them growing . . . those slick hair coats and big briskets are what I like . . . no scours at all since we started feeding Dynafac . . . man, what a difference in feed costs!"

These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

Operators report good results using both Dynafac and hormones, either oral or implant. Each additive works in its own way to give you improved efficiency. Not a hormone, Dynafac remains in the intestinal tract to do its job—controls harmful bacteria and fungi without disturbing beneficial organisms in the paunch.

Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

You, too, can make bigger profits by feeding Dynafac. Why not get it into your feed now?

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.

WESTERN YEAST CULTURES

For 28 Years Have Been a Proven and Dependable Source of

ENZYMES

Now — New

WESTERN LIVE YEAST CULTURE 2-2-5

and

LACTO-ZYME

are even higher in digestive enzymes based on latest experimental data. These products carry a number of Enzymes, including Proteolytic (action on proteins), Amylolytic: Zymase, Maltose and Invertase (action on starches, sugars and fiber), Catalytic, Lactic Ferments and others.

These Active Factors Can Be Added to YOUR FEEDS

At Little or No Extra Cost

You will be hearing more and more about Enzymes in nutrition. Why not have them in your feeds now?

Write

WESTERN YEAST COMPANY

Chillicothe Illinois

CALENDAR FOR 1958-59

AUGUST

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
		1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
		1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Texas; chm., J. R. Couch, Poultry Science Dept.

Oct. 9 — Vermont Feed Dealers & Manufacturers Assn.; Agricultural Science Bldg., University of Vermont, Burlington, Vt.; sec., D. C. Henderson, Poultry Department.

Oct. 9-10—Washington Poultry & Hatchery Assn.; Winthrop Hotel, Tacoma, Wash.

Oct. 10-11—Arizona Grain and Seed Assn.; Hotel Westward Ho, Phoenix, Ariz.; sec., Hayden C. Hayden, Box 156, Tempe, Ariz.

Oct. 12-14—Kentucky Poultry Improvement Assn., and Kentucky Poultry Federation; Kenlake Hotel, Hardin, Kentucky; sec., John W. Tuttle, 730 Rose Street, Lexington, Ky.

Oct. 14-15—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., P. Paul Williams, 615 E. Franklin St., Richmond, Va.

Oct. 14-16—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, University of Maryland, College Park, Md.

Oct. 15—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 16-17 — Oklahoma Formula Feed Conference, Oklahoma State University, Stillwater, Okla.; chm., Dr. Rollin H. Thayer, Poultry Science Dept.

Oct. 20-21—California Animal Industry Conference, Fresno Memorial Auditorium, Fresno, Cal.; sponsored by University of California and California Hay, Grain & Feed Dealers Assn.; sec., John Gilmore, 1400 10th St., Sacramento, Cal.

Oct. 23-24—First Annual Poultrymen's Institute; State College of Washington, Pullman, Wash.

Oct. 23-24 — Iowa Seed Dealers Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Oct. 23-25—Nutrition Conference, Alabama Feed Assn.; Alabama Polytechnic Institute, Auburn, Ala.; chm., Merlin T. Bryant, Brundidge Milling

(Continued on page 38)

No claims necessary!

"SNOW FLAKE" BRAND OYSTER SHELL SPEAKS FOR ITSELF!

SEND FOR SAMPLES AND SEE PROOF OF ITS HIGHER QUALITY.

Phone OR 2-9441

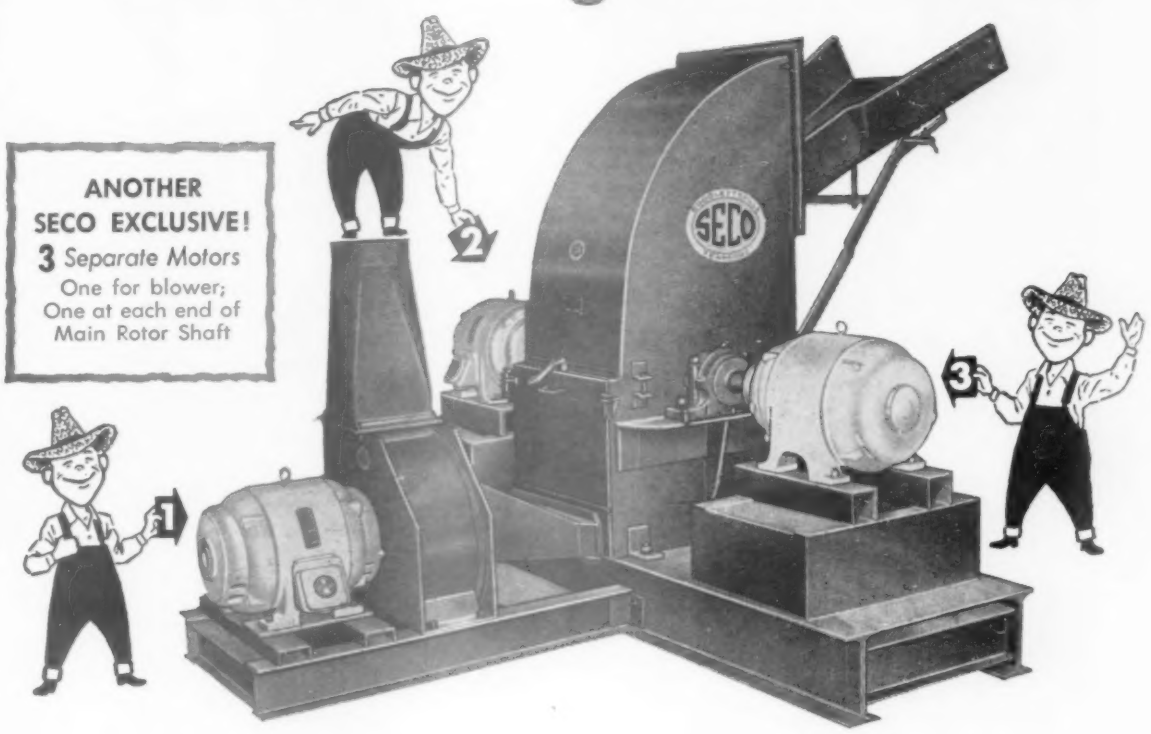
MAYO SHELL CORP.

WRITE WIRE PHONE

P. O. BOX 784 • HOUSTON, TEXAS

Only THE triple-powered SECO HAMMERMILL gives you these 3 BIG ADVANTAGES!

ANOTHER SECO EXCLUSIVE!
3 Separate Motors
One for blower;
One at each end of
Main Rotor Shaft



1. Reduce expensive demand charges
2. Increase overall power and capacity (especially important in areas with limited power supply)
3. Pay only for power you actually need for each job

You have all the advantages of the SECO SUPERIOR Hammermill—plus these advantages of triple-power! Use all three motors—or two motors when the job is light.

Savings on power alone will pay for entire unit, since the triple-powered SECO costs no more than ordinary single-powered hammermills.

SECO inc. GOODLETTSVILLE, TENNESSEE

SECO offers to the feed industry experienced Planning, Engineering and Manufacturing Service on equipment needs—including complete mill installations. Your inquiries are invited.

Send all the facts about the SECO "Triple-powered" Hammermill ☐
Send literature on SECO mill equipment and service ☐

Name_____

Firm_____

City or Town_____

Zone_____ State_____

BOWMAN PRODUCTS

VIANOL
Oil soluble vitamin protector and pigmentation aid.

BoA-S and Bo-A
Stable dry vitamin A products.

BoDEE
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

BoDEE (Mineral) STABLE VITAMINS D
Vitamin D that will not decompose when combined with minerals.

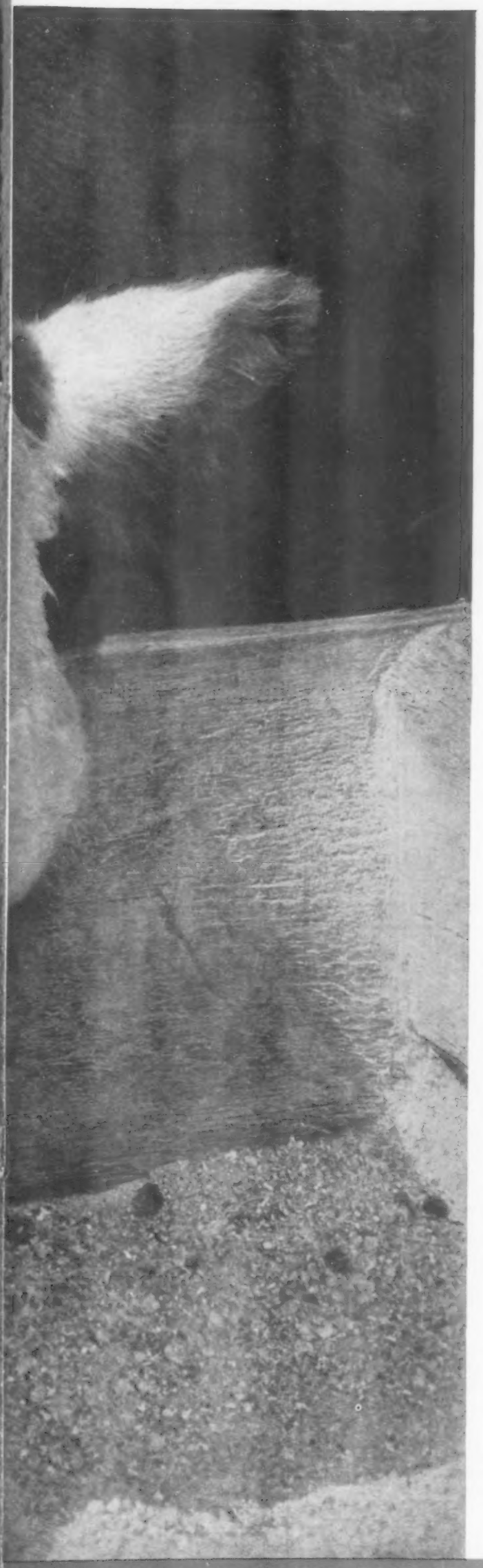
XANTHOPHYLL CONCENTRATES
For better poultry pigmentation.

HYDROPOID
Dry, free-flowing partially hydrogenated animal fat.

CLOROFOLEN
Effective dog food deodorant.

Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

ANIMAL FEED DEPARTMENT • AGRICULTURAL DIVISION



Your cattle feeders can get results like these:

44 EXTRA POUNDS PER HEAD AT MARKET

10% SAVING IN FEED

UP TO $12.00 EXTRA RETURN PER HEAD

Experiments all over the country have proved that AUREOMYCIN provides a sales *clincher* — the promise of greater dollar returns. Results from a series of trials show that AUREOMYCIN in good feeder rations has boosted weight gains by an average of 44 pounds per head, cut feed used per pound of gain by 10%, increased returns by $12.00 per animal!

In addition, experiments have shown up to 59.4% reduction in respiratory disease; up to 80% reduction in liver abscesses; almost complete elimination of foot rot.

These results were obtained by feeding quality rations containing sufficient AUREOMYCIN® Chlortetracycline to provide approximately 70 milligrams per head per day continuously. This is the standard recommended amount for all cattle not subjected to serious disease exposure or prolonged stresses.

When severe disease or stress is present, recommend the Cyanamid stress program with higher levels of AUREOMYCIN.

Talk to your cattle feeders about these results and *sell* them feeds containing the required amount of AUREOMYCIN. Recommend *continuous* feeding!

CYANAMID

AUREOMYCIN IN FEED LOT RATIONS

• AMERICAN CYANAMID COMPANY • NEW YORK 20, N. Y.

Co., North Main St., Brundidge, Ala.

Oct. 27-29 — Nebraska Formula Feed Conference; University of Nebraska, Lincoln, Neb.; chm., Dr. J. L. Adams, Poultry Husbandry Dept.

Oct. 31—Nebraska Rooters Day; University of Nebraska, Lincoln, Neb.; chm. Dept. of Animal Husbandry.

Oct. 31-Nov. 3 — Florida Nutrition Conference; cruise from Miami to Nassau, British West Indies; chm., J. P. Feaster, Department of Animal Husbandry and Nutrition, University of Florida, Gainesville, Fla.

Nov. 2-5—National Renderers Assn., Hotel Statler, Washington, D.C., sec., Miss Jamie C. Fox, 30 N. LaSalle St., Chicago 2, Ill.

Nov. 7—Washington Animal Industry Conference; Lower Columbia Junior College, Longview, Wash.; sponsored by State College of Washington, Lower Columbia Junior College and Washington State Feed Assn.; assn. mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Nov. 12-14 — Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Small Mill Short Course; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

1959

January 18-20 — Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 26-28—Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Ericksen, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

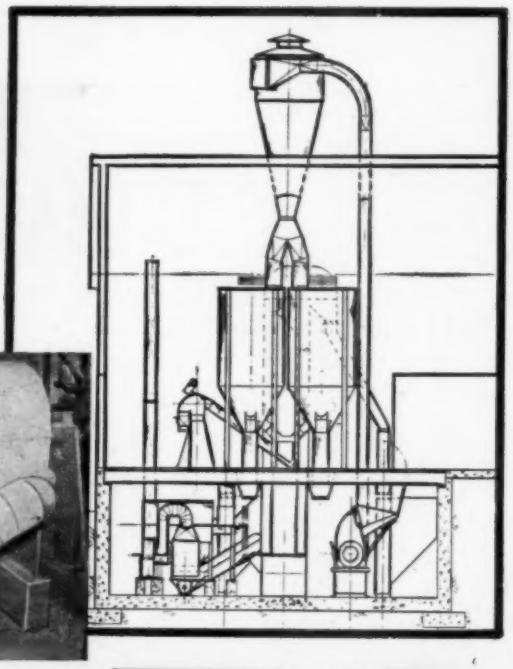
June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9—Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

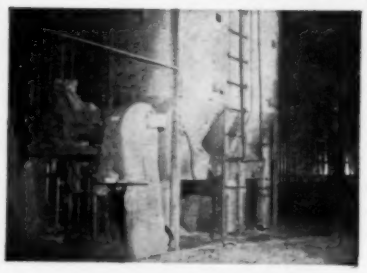
HOW FORDS PROVIDES *Automation* For Custom Millers

Bill Bixler, Mgr.

New 24" Fords Hammermill in the Crouthers Plant



FORDS New Model 50 Reel Cleaning Corn Sheller installed in feed processing plant on Crouthers Farm in Lilbourn, Mo.



At Right: FORDS Molasses Blender and two No. 4 Vertical Mixers in the Crouthers plant.

They have a big livestock feeding operation on the Paul Crouthers farm in Lilbourn, Mo. They sell no feed, but custom process their own feed for 1,000 head of cattle and 1,100 head of hogs. They needed equipment for processing hay, ear corn and other grains.

A Myers-Sherman Representative was called in and soon had a FORDS Automation layout ready. They wanted to have all one kind of equipment so the layout included a Fords 24 Inch Hammermill, Fords 60 Inch Dust Collector, a Fords Drag Feeder, Fords Forced Feed Molasses Blender, Scales, two Fords No. 4 Vertical Mixers and a Fords Model 50 Reel Cleaning Sheller.

Mr. Bixler said they had no previous experience in processing feed on the place, but since the installation they figure that they will save an estimated $700.00 per month in feed costs. This represents a big dividend on their investment.

Let a FORDS representative show you Actual Mill Layouts of FORDS AUTOMATION ENGINEERING and how he can save you hundreds of dollars on your installation.

Find out what can be done to your mill to make it more automatic. Myers-Sherman Engineers have had lots of experience. Know many short cuts. Are trained to give you the most economical layout that will do the job.

SEND COUPON TODAY

MS MYERS-SHERMAN COMPANY
Streator, Illinois

Automation Engineering Dept. 3001
Myers-Sherman Co., Streator, Illinois

Please send us, without obligation, literature describing the following equipment:

- ☐ Remote Feed Control Mills
- ☐ Vertical Mixers
- ☐ Molasses Blenders
- ☐ Corn Shellers
- ☐ Drag Conveyors
- ☐ Have your field man get in touch with us about your Automation.

Name..... Title.....

Firm Name.....

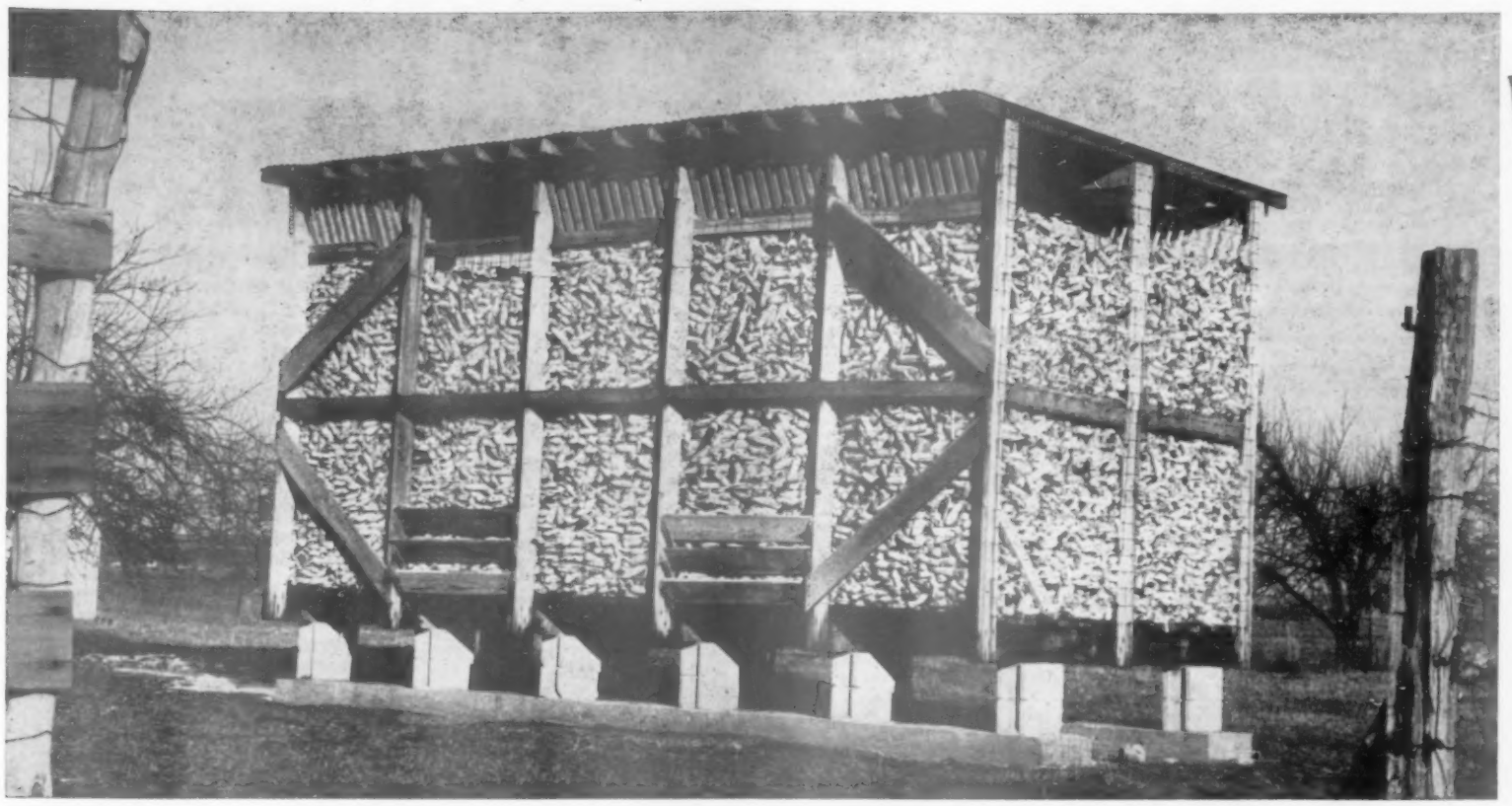
Address.....

HONEGGER DEALERS PROFIT from the BIG FRANCHISE

BIG 4 EXCLUSIVE FEATURES

Franchises available in some areas
WRITE, WIRE or PHONE
Honeggers' & Co., Inc.
Fairbury, Illinois

FEED
CHIX
FARM BUILDINGS
EQUIPMENT



60,000 units of vitamin E—maybe! The owner estimates this crib will deliver about 700 bushels of shelled corn. If grown under ideal conditions of soil, temperature, and moisture, this much corn would have somewhere in the neighborhood of 60,000 International Units of vitamin E when harvested.

60,000 units of vitamin E—sure! This is three pounds of *Myvamix® Vitamin E Feed Supplement*. It also has 60,000 International Units of vitamin E.

If the corn had all the vitamin E it could have and if it were all used immediately, there might be enough E in the feed to get by. But the best mills know that feed poor in vitamin E is nutritionally incomplete and that the vitamin E content of corn is a highly variable quantity. They also assume that when there is a large corn carry-over, the vitamin E may be gone by the time the corn is used. So they fortify with *Myvamix Vitamin E Feed Supplement*. Then they're sure.

The vitamin E in *Myvamix* is on a dry, non-dusting soy grits base that's no trouble at all to handle. It is stable despite heat, moisture, and long storage. And it costs only a few dimes to fortify a ton of feed. For information or a quotation, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • Charles Albert Smith Limited, Montreal and Toronto.

producers of
Myvamix
Vitamin E

DPi

Also . . . vitamin A . . . distilled monoglycerides . . . some 3600 Eastman Organic Chemicals for science and industry

Distillation Products Industries *is a division of* **Eastman Kodak Company**

Broiler Council Board Outlines Promotions For Coming Months

POLAND SPRING, MAINE—The board of directors of the National Broiler Council, aided by 41 industry committeemen, has developed a program to promote broilers continuously during fall, winter and through the middle of next summer, the council has announced.

Representing all major broiler producing areas, the industry leaders at a recent meeting set a sales promotion for fall, beginning immediately with a push for "Bro-Hens," followed with a week-by-week drive for more broiler sales during fall, and then concluded with a concerted effort to sell broilers for roasting during the Thanksgiving and Christmas periods.

In addition to continuous sales pressure in the home consumer field, the council board launched a program to promote broiler sales in the restaurant and institutions field.

The group also voted to explore expanding sales in the school lunch program, and voted two sales campaigns for 1959—a "Chicken Luau" promotion beginning in February and a repeat of Chick-n-Que for next summer.

In other actions, the directors approved Delmarva Poultry Industries, Inc., as an affiliate, and thus completed setting up continuous finance plans for the areas of the nation which produce 93% of all broilers. The group recommended a market research division to aid the professional advertising, merchandising, publicity and public relations staffs be set up "as rapidly as finances make it possible," and that information developed by this division be interpreted and channeled to the industry for its use.

Joe Fechtel, Dallas, council president, reported to the board that "this growing industry is giving ever increasing support to the Broiler Council." Income for the first six months of this year reached $221,435 compared to $218,000 for the entire 12 months during 1956, he said.

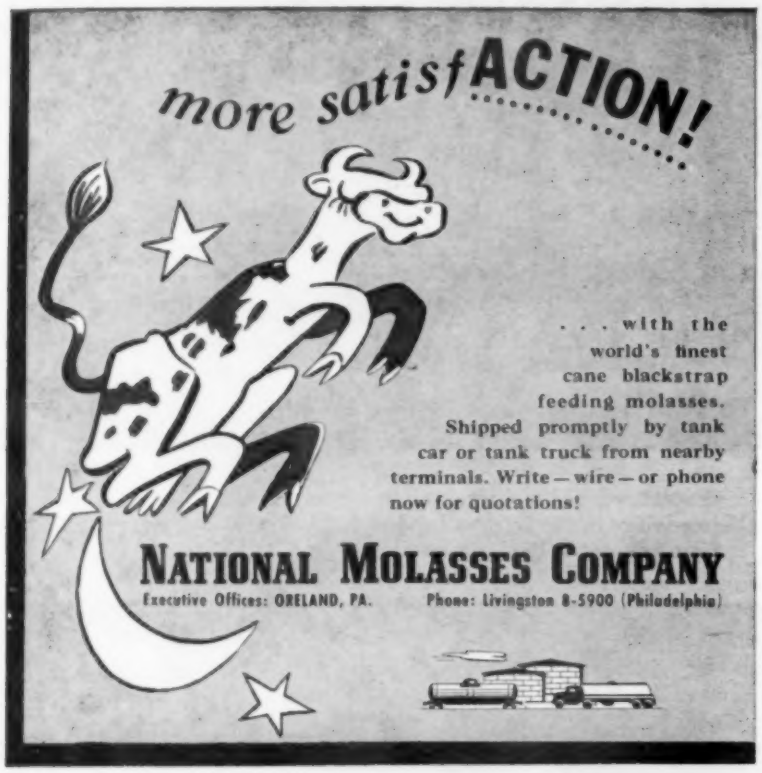
Bro-Hen Promotion

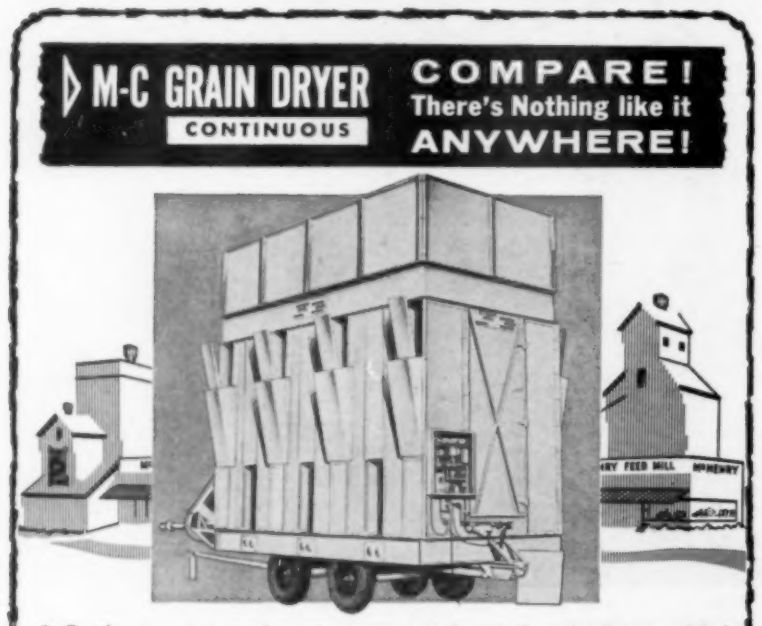
The Bro-Hen promotion, designed to create markets for breeder hens which will come available this fall, will include a point-of-purchase merchandising program as well as consumer sales efforts and promotion to the food retailers.

Working with cooperating companies, the council will promote "chicken and biscuits" as a main theme during the fall period. The restaurant program will feature a "recipe of the month" theme which will be introduced to restaurants and institutions through ads in trade magazines, and merchandised with menu clip-ons and table tents.

A public relations program was approved to help inform the consumer that federal inspection is "actually a federal endorsement of a high quality product."

Merchandising and public relations to food retailers were studied, as were continuing actions started earlier in the year. Money was voted to step up this program for fall.


more satisfACTION!
. . . with the world's finest cane blackstrap feeding molasses. Shipped promptly by tank car or tank truck from nearby terminals. Write—wire—or phone now for quotations!
NATIONAL MOLASSES COMPANY
Executive Offices: ORELAND, PA.
Phone: Livingston 8-5900 (Philadelphia)


M-C GRAIN DRYER
CONTINUOUS
COMPARE!
There's Nothing like it
ANYWHERE!
• Continuous . . . goes in wet; comes out dry. • Completely assembled Grain Dryer. • Portable, requires very little installation expense. • Strong! Holds 20 tons of grain. • Capacity up to 268 bu. per hour. • 15 H.P. electric motor. • LP or natural gas. • Quiet for "in town" use. • Minneapolis-Honeywell temp. and safety controls. • Can't plug, grind or crack grain. • Dries all grains, beans and rice. • Can be put in operation for less than ½ the cost of other continuous dryers of same capacity. • Serviced by National Distributing Organization.
Makes grain drying easier than ever! No batches; just simple, continuous drying. An M-C Grain Dryer at your elevator will do a better job of quality drying. Here's a grain dryer that really improves grain quality with no heat damage—no kernel checks or cracks. These are some of the features only available in the M-C Grain Dryer.
MATHEWS COMPANY
CRYSTAL LAKE, ILLINOIS

Detroit "Intends" to Be Major Seaway Port

LANSING, MICH.—Detroit intends to be the domineering Michigan port on the St. Lawrence Seaway, according to Carlis Stettin, Detroit Port director.

Expressing his views at a recent meeting to consider seaway developments, Mr. Stettin said that only a few Michigan ports at most will benefit from traffic coming through the seaway.

The reasons he gave were that (1) cost of operating even foreign ships runs up to $2,000 a day and deep-water vessels usually do not dock for loads of less than 600 tons, (2) shipping lines might find it more economical to move consignments overland from Saginaw or Muskegon to Detroit and pick it up at the larger city, (3) Muskegon has an "agricultural" hinterland that would support a limited freight traffic and (4) it is 640 miles by water from Detroit to Chicago, a trip that takes up to 60 hours, and "no vessel will touch at all the various ports between."

He said that Detroit would be the "big port" on the east, with Chicago the major port on the west.

Dr. H. H. Stonaker Named at Colorado

FT. COLLINS, COLO.—Dr. Howard H. Stonaker, professor of animal husbandry at Colorado State University, Ft. Collins, has been named acting head of the university's department of animal husbandry.

He replaces Dr. Lloyd E. Washburn, who asked to be relieved to devote full time to research and teaching. Dr. Washburn has been head of the department since 1952.

University of Manitoba Studies Dwarfism

WINNIPEG—The causes of dwarfism in cattle, the relationship between various types of dwarfism found in western Canada and the development of accurate methods of detecting animals liable to bear dwarfs as indicated by studies carried out by the animal science department of the University of Manitoba were outlined to the annual meeting of the Canadian Veterinary Medical Assn. here recently by Dr. E. W. Stringam, professor and chairman of the University's animal science department.

Dr. Stringham pointed out that dwarf-like cattle have been reported over a period of 100 years but it is only within recent years that the university launched its present study. A herd of dwarf-like cattle has been collected which have been classified into three groups: the potbellied, short limbed types, frequently possessing dished faces and overshot lower jaws and called "snorters" because of their heavy breathing; "compressed" and "compacts," so called because they exhibit normal form but are about two thirds normal size, and "miscellany," which include "pin heads," "scarecrows," and "tom thumbs."

Studies so far indicate that the "snorter" type is hereditary and due primarily to a recessive gene. It also appears that some of the "compressed" and "compact" types may be forms of the "snorter" type.

None of the methods used for detection of "carrier" animals has proven absolute in the studies, Dr. Stringam said, but body form, insulin shock tests, blood tests and others are being investigated.

He explained that dwarf characteristics are believed hereditary and that if both parents are carriers, theoretically 25% would be normal and would not carry the dwarf genes, 50% would be carriers and 25% dwarfs. He recommended that cattlemen be wary of stillborn calves because this is one of the first indications of dwarfism. If dwarf calves appear, he recommended that a new bull be purchased. In his view, inbreeding does not cause dwarfism but only exposes what is there.

Exchange Buys Steer

SAN FRANCISCO—The San Francisco Grain Exchange recently purchased one of the champion steers at the Sonoma County Fair as part of an annual project to help support 4-H Club activities. Members contribute annually to a fund which is used to pay over the market price for champion steers at the fair. This year's purchase was handled by E. B. Murphy, Wilkinson Grain Co.

In Canada It's . . .
N. D. HOGG, LTD.
Feed Ingredient Merchants
P. O. Box 66, Station Q
TORONTO, ONT., CANADA

SW
FOR THE BEST IN
SCREW CONVEYORS
SPROUT-WALDRON
MUNCY, PENNA.

ADVERTISEMENT — This is a paid advertisement

Prepared by U. S. Industrial Chemicals Co.

U.S.I. FEED NEWS®

Vol. V ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ No. 8

Increasing Feed Concentration Stresses Need for Proven Sources of Nutrients

Forty to Fifty Components Essential in Poultry Feed

The more feed value we pack into each pound of a feed, the more critical it becomes to provide an exact balance of many essential nutrients.

An efficient poultry ration today must provide: a high level of energy from carbohydrates and fat; proteins in which 22 important amino acids are in the right balance, including 12 for which no other amino acids can be substituted; and some 12 or more vitamins and about 15 minerals in the right proportion.

Also valuable in feeds for poultry and other animals are medicaments, antibiotics and as yet unknown growth factors.

When you juggle quantities and grades of the hundreds of natural feedstuffs that are now available, it is difficult to make a mixed feed complete in every respect. The quality of natural feedstuffs is highly variable. As simple a change as the artificial drying of corn on the farm affects the feed value of the grain.

Vitamins, amino acids and other feed additives of known and concentrated strength are vital to quality feed manufacture.

For Your Supply, See U.S.I.

U.S.I. is well known as the leader in lowering the cost of methionine to the feed industry. This essential sulfur amino acid is important to protein balance in feeds. Actually, U.S.I. began its long history in feed supplements much earlier as a producer of molasses distillers solubles, a fermentation source of riboflavin and still unknown growth factors.

Today U.S.I. has an extensive line of supplements for all kinds of animal feeds. They are available, both as separate ingredients and in custom mixes, to simplify formulation and mixing. Ask U.S.I. for the latest quotation on the ingredient you need. It pays to try U.S.I.

Growth Factors Needed in Most Formula Feeds

The first proof of the need for growth factors, in addition to protein, fat, carbohydrates, minerals and water, came in tests with poultry early in this century. Today, U.S.I. supplies many of these essential factors in supplements for poultry, hog, dairy, beef and pet feeds.

Earliest of the growth factors to be named were vitamins A and D, which prevent eye inflammation and rickets in chicks. Modern, stable sources of these two vitamins are provided by U.S.I. Economical and concentrated sources of growth factors which retain potency are as important to the feeder as was the original discovery of their value.

The value of the yellow pigment, riboflavin, was proved when milk products corrected poor hatchability and leg weakness in chicks. Pantothenic acid, often lacking in high-energy rations, was found essential for growth and for control of a serious dermatitis.

Study of crazy chick disease brought discovery of vitamin E and anti-oxidants that save vitamin values in feed. Slipped tendon problems, in turn, were corrected by manganese together with choline and niacin.

Isolation of vitamin B_{12}, an essential part of the animal protein factor, led to the use of antibiotics in improving growth. Vitamin K, a blood clotting aid, like many other nutrients, was discovered to be most economical in synthetic form, as provided by U.S.I.

Methionine Gives Balance

Rapid acceptance of high-energy rations, with exact ratios of protein to energy, showed the importance of amino acid balance. Methionine continues to be the major amino acid for practical use in balancing proteins in feeds, and for overcoming stress factors. Research is showing many other new values of free methionine, the true amino acid. U.S.I. is a reliable, prompt source of supply. For quotations, write or call U.S.I. You'll find it pays!

Popular Pre-Mixes Offered by U.S.I.

When a pound of specially-formulated feed produces a pound of broiler, as in recent college tests, the feed has to be packed with many nutrients. Research still hasn't shown all the interrelationships between the different feed additives and nutrients that make the best mixture. But levels of vitamins, amino acids and minerals, based on standards as recent as five years ago, are no longer adequate in modern high-energy rations.

Certain combinations of additives however, are known to be efficient and economical. U.S.I. provides many such combinations in concentrations calculated for easy formulation. We can help you design a mix of vitamins and other supplements to supply your needs for a particular feed in one handy package. Just ask U.S.I. for the pre-mix to meet your specifications.

FEED PRODUCTS OF U.S.I.

- U.S.I. ANTIBIOTIC FEED SUPPLEMENTS (bacitracin and procaine penicillin)
- U.S.I. VITAMIN B_{12} SUPPLEMENTS
- U.S.I. MENADIONE PRODUCTS (vitamin K_3)
- U.S.I. BHT PRODUCTS
- U.S.I. CUSTOM MIXES
- U.S.I. RIBOFLAVIN PRODUCTS
- U.S.I. CHOLINE CHLORIDE (25% dry or 70% solution)
- MOREA® PREMIX
- U.S.I. CALCIUM PANTOTHENATE Products
- U.S.I. DL-METHIONINE (feed grade)
- U.S.I. PERMADRY (sealed-in vitamin A)
- U.S.I. VITAMIN D_3 (stabilized)
- U.S.I. NIACIN
- U.S.I. VITAMIN E PRODUCTS

BRANCHES IN PRINCIPAL CITIES

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corporation

99 PARK AVE. NEW YORK 16, N. Y.

MOREA is a registered trademark of Feed Service Corporation.

Iowa Mill Outgrows Expanded Plant in Less Than 2 Years

Firm Notes Trend Toward Complete Feeds for Swine

By Al P. Nelson
Feedstuffs Special Writer

When the J. H. Wake Feed Mill, Oskaloosa, Iowa, expanded its operations in early 1957 by installing bulk service, J. H. Wake, founder, and his son, Phil, thought they would have a plant which could meet demands from customers for some years.

Geared to a capacity of 50 tons daily, this bulk and pellet mill seemed adequate to meet the growing demand for pellets and bulk delivery in the Oklaloosa area, and also in branch stores at Packwood, Ottumwa and What Cheer, Iowa.

But business rose so rapidly—to the point where 25% of the feed manufactured is delivered in bulk—that Mr. Wake and his son are planning another sizeable expansion move.

The J. H. Wake Feed Mill has two plants in Osklaloosa, the home city. One feed mill, the original mill, is devoted to custom mixing, farm supply store operations and general offices. The second mill, a new pellet operation where the firm's Circle Brand feeds are made, is about two blocks away. Erected several years ago, this building was 90 by 130 ft. originally. Last year it was enlarged to 90 by 260 ft. In the addition were housed 11 10-ton Butler bulk tanks.

The farmer can use push button controls to load his own truck with bulk feed of the kind he wants, or he can have the Wake firm deliver up to seven tons in its new, large delivery truck. Most feeders order in two-ton loads, while the larger feeders buy from four to six tons.

Many of the farmers like to haul their own bulk feed so they can get the $2 ton discount in addition to the $5 ton discount on bulk.

For more than one year, the J. H. Wake Co. has been operating this type bulk equipment. As the branch stores funneled in their bulk orders, the one big, seven-ton bulk truck attempted to handle all the orders. But the Wakes soon saw that either they would have to get another bulk truck or expand operations even further.

PELLETING, MIXING PLANT—This is the second plant of the J. H. Wake Feed Mill. The building was formerly 90 ft. by 130 ft., but it has been enlarged to 90 ft. by 260 ft. In the addition were housed 11 10-ton storage tanks for bulk feed. Their bulk program has been so successful that they have another expansion under way.

Expansion Move

They decided upon an extensive expansion move which is now under way. This move will include the installation of six new square bins to hold bulk feed. Each will have a capacity of 15-18 tons. The Wakes will install square bins to fit their floor area.

To accommodate the larger tonnage square bins, the firm has to raise the roof of part of the new building.

A new Sprout-Waldron 18-ton, pneumatic-type, bulk truck is being added. This truck will transport bulk feed to each store in the Wake chain and will unload it into five tanks of 15-ton capacity each. Each branch will have a six-ton bulk truck and will then reload and deliver to bulk delivery customers.

Through such a system, the Wake

ORIGINAL MILL—This is the original J. H. Wake Feed Mill, Oskaloosa, Iowa., a firm that has a second mill nearby and three branch stores. The original mill is used for custom mixing, farm supply store operations and general offices. The firm services, but no longer sells, farm machinery.

For High Volume . . .
Consistent High Quality . . .
Economical, Trouble-free Performance . . .
Long Life

THE JAY BEE MODEL W

"Texture Grind" * HAMMERMILL

With Separate MOTOR DRIVEN FAN (ALL the power of the mill motor goes into grinding)

50 to 200 HP—Feed Opening 15½" x 12" to 26" x 12"— Flat Belt, V Belt, or Direct Motor Drive

The rugged, heavy duty Jay Bee Model W is built to produce—and keep on producing. Owners and operators throughout the United States and in foreign countries attest to its consistent high-volume, high-quality performance — many Jay Bee mills have been in continuous operation for more than 30 years.

*Texture Grind: Horsepower for horsepower, screen for screen, a Jay Bee is unexcelled for its consistently uniform texture of grind.

J. B. SEDBERRY, Inc., Franklin, Tenn.

Mail this coupon today—and find out what the Jay Bee Model W can do for you.

J. B. SEDBERRY, Inc.
Dept. F, Franklin, Tenn.

Please send me full details about the Jay Bee Model W Hammermill.

Name .....

Company .....

City ..... Zone .... State .....

SPECIFY Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave.
ST. LOUIS 1, MO.

Manufacturers and Suppliers of

EXPELLERS
SOLVENT EXTRACTION EQUIPMENT
DRYERS • FLAKERS
GRAIN EXPANDING EXPELLERS
MATERIAL HANDLING EQUIPMENT

Write for information and prices
The V. D. ANDERSON COMPANY
Division of International Basic Economy Corporation
1900 West 96th Street, Cleveland 2, Ohio

DO YOU KNOW THESE PEOPLE?

Virgil H. Scroggs, Vice President in charge of research and control; Dr. Ray M. Anderson, Vice President in charge of Poultry and Animal Nutrition; Walter M. Gatlin, Sales Manager; K. L. (Kenny) Stephens, Director of Advertising and Sales Promotion.

C. P. WENZEL
DIRECTOR OF DAIRY SERVICES

J.M. BEARD
DISTRICT REPRESENTATIVE
SOUTHEAST

JOE RABYOR
DISTRICT REPRESENTATIVE

SHELTON GOSSETT
DISTRICT REPRESENTATIVE
WEST TEXAS

WILLIAM BOYD
DISTRICT REPRESENTATIVE
MIDWEST

JACK ANSTINE
DISTRICT REPRESENTATIVE
WEST COAST

. . . they can help you solve some of your most pressing problems in building quality feeds . . . and selling them.

The VIT-A-WAY Program goes far beyond furnishing you the best means of fortification for your livestock and poultry feeds. It provides you with the services of a highly trained staff of men whose "know-how" in animal nutrition, feeds and feeding, merchandising and selling can help you capture a larger share of the feed business in your trade area.

THIS IS THE VIT-A-WAY PROGRAM . . .

ADVERTISING and MERCHANDISING HELP - -

Our complete advertising department will assist you in advertising and merchandising programs . . . designed to promote the sale of your feeds. Ad mats . . . folders . . . point of purchase material . . . radio copy . . . inserts and stuffers . . . hand bills . . . and everything you need to build sales and customer demand for your feeds!

DIRECT MAIL PROGRAM - -

Free mailings that go right into the home of your customers and prospects . . . with your name imprinted on them . . . These mailings invite them to visit you . . . and further explain to them how your VIT-A-WAY Fortified feeds will help them get top feeding results and lower feeding costs.

SALES TRAINING - -

Help for you and your salesmen to be sure they are familiar with your products, and how to apply their use to the problems of the feeder. Selling tools, literature, and mailings go to your salesmen to keep them abreast of new developments and findings so they can do a better selling job for you.

NUTRITIONAL COUNSEL - -

Our department of research and control is always ready to answer questions and furnish data on "tomorrow's problems today" . . . to help you meet and solve the problems in your own area. This puts you in a better position to serve your customers with the newest developments in scientific and efficient feeding practices.

FEED FORMULA SERVICE - -

Our complete feed formulating department is at your service to help you prepare any type formula for any type livestock feed. Your formulas will be made using local and easily available ingredients . . . and, they will be uniform and result-producing at the lowest possible cost to the feeder. You will get "your own" formulas prepared by some of the nation's finest nutritionists, who are on the VIT-A-WAY staff.

THESE ARE RESULTS OF THE VIT-A-WAY PROGRAM . . .

"My feed sales have doubled in the past two years. We think this is the result of your VIT-A-WAY products and VIT-A-WAY services."
MIXON MILLING CO.
CAIRO, GEORGIA

"Our feed business has more than doubled since we started using VIT-A-WAY in our feeds, and it is still increasing."
LIPSCOMB GRAIN & SEED CO.
SPRINGFIELD, MISSOURI

"Our sales have tripled in two years. VIT-A-WAY has been essentially our quality factor which has obtained new business and kept it here."
WALLACE GRAIN & FEED CO.
McKINNEY, TEXAS

"VIT-A-WAY has been and is today the greatest contributing factor in our successful feed program. Our increased sales volume is proof of outstanding results."
FARMERS UNION CO-OP MILL
SUPERIOR, NEBRASKA

VIT-A-WAY, INC. P. O. BOX 4311 FORT WORTH 6, TEXAS

☐ I'm interested in increasing my feed sales — send details
☐ No, I'm satisfied with my present feed sales

Name _____

Co. Name _____

Address _____

_____

IT WILL PAY YOU TO GET FULL DETAILS TODAY!

VIT-A-WAY IS MANUFACTURED UNDER U.S. PAT. NO. 2,611,702 T.M. Reg. U.S. PAT. OFF.

VIT-A-WAY makes a Good Feed BETTER!

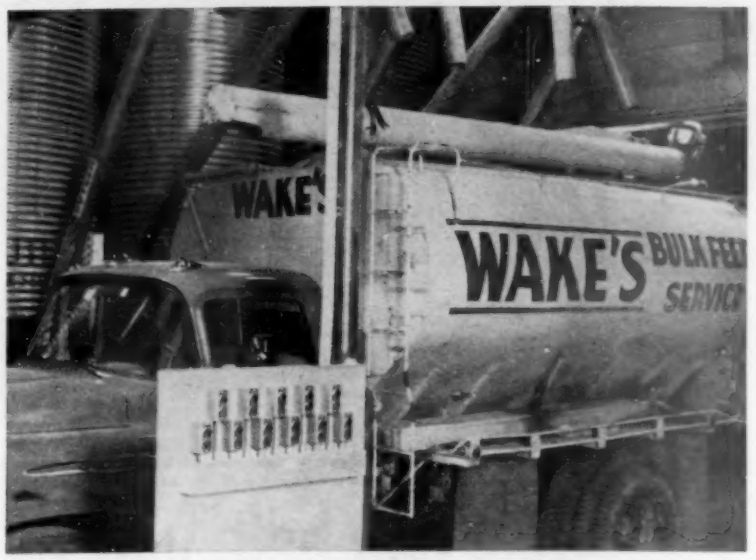
FEED DEALERS—
There's a ready market and year 'round demand for salt and minerals. Keep plenty of BARTON salt on hand. Available in bags or blocks . . . plain or mineralized.
THE BARTON SALT COMPANY
HUTCHINSON KANSAS

When your formula calls for trace minerals, there's no easier, surer, less expensive way to provide them than to include BARTON Trace Mineral Salt. BARTON salts flow freely, mix readily and provide the level of mineral supplementation you need. The BARTON blend of pure evaporated salt, manganese, iron, cobalt, calcium, copper and iodine provide the "Hidden Value" that gives your formula the extra margin of performance.

2

The salt cellar of America

KEES & COMPANY
Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
327 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1528



DO-IT-YOURSELF LOADING—A J. H. Wake Feed Mill bulk truck is shown under the hoppers from the firm's bulk storage bins. In the foreground is the push-button service the farmer can use in loading his own truck. The firm will have an 18-ton truck for delivering to branch stores. Each branch has a 6-ton bulk truck for deliveries in the branch area. The firm has its main plant in Oskaloosa, Iowa, and branches in What Cheer, Ottumwa and Packwood, Iowa.

firm hopes to expand its bulk business and also take care of farmers who like to haul their own bulk feed from branch stores.

More Complete Feeds

"The trend in this area—and we are banking on it," states Phil Wake, "is for hog feeders to buy a complete feed. Even hog feeders who are raising a great deal of corn are selling their corn to us and buying a complete feed. This saves many of these feeders a lot of time. We insist on under 15% moisture corn as we use this grade in all our feeds.

"One hog feeder is selling us 5,000 bu. of his corn and buying back a complete feed. Our whole setup is arranged to take care of this type of selling and buying arrangement. However, at our custom mills in Oskaloosa and at What Cheer, Packwood and Ottumwa, we can grind and mix according to any farmer's recommendations, and we like to get this type of business, too."

Mr. Wake says that one hog raiser brought in six tons of shelled corn and wanted a 14% ration made, pelleted and delivered in bulk. The Wake mill made the ration, using its own 40% pig balancer and brought the ration down to 14%, and, as the hogs got older, down to 13 and 12%.

This rog raiser is a good manager, uses good equipment, including waterers, the Wakes said. He tells the Wakes that due to these factors, plus pellet feed and bulk delivery directly into feeders, he is now operating his enterprise with one less man.

In some cases a few hog buyers have their own hammermills, reports Mr. Wake. In these cases the farmers grind their own grain and buy concentrate from the Wake firm and dump it into the grinder.

New Pelleting Facilities

The new addition will have a Wenger pellet mill which will enable the Wake firm to make soft pellets. They now have a 50 h.p. Sprout-Waldron pellet mill. The Wakes have been pelleting feeds since 1946. They produce hog, cattle, poultry, lamb and sheep rations. Mr. Wake said he is very interested in the Purdue experiments which indicate that lambs can be put on full feed the first week with pellets. The Wakes are planning promotions along this line.

The Wake custom mill at Oskaloosa has a one-ton Sprout-Waldron mixer and a 75 h.p. J. B. Sedberry hammermill. The pellet plant has two 2-ton Sidney mixers and a 100 h.p. J. B. Sedberry hammermill. At the Ottumwa branch there are a one-ton Munson mixer and also a grinder. What Cheer has a one-ton Brower mixer and Sedberry grinder.

Phil Wake said he likes a feed mixing plant all on one floor. When the new expansion move is completed, the plan will offer facilities to farmers whereby a man can drive in with a six-ton load of corn, dump it, have it ground and stored in a separate bin and then mixed according to specifications.

"We'll be set up, we believe, to perform just about any type of feed processing the farmer wants," ex-

WANT MORE CONVEYOR VALUE?

GET ELTON
THE BIG NAME IN CONVEYORS

Elton quality engineered conveyors are your best bet for long lasting, trouble free performance. They are used by thousands of companies handling boxed, bagged or bulk materials. They will reduce operating costs in your plant.

There is an Elton conveyor to fit your specific needs whether it is powered belt, wheel or roller gravity, stationary or portable. We also manufacture many types of custom built equipment to fit your installation. Ask our experienced engineers to help you select the right materials handling equipment.

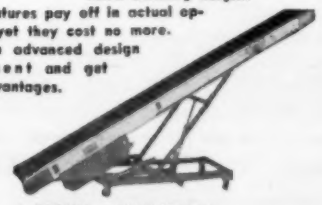
A COMPLETE LINE TO EXACTLY FIT THE JOB!

D-SERIES

B-SERIES

The new all purpose lifts, now standard equipment on the A, B and D series conveyors, make these machines the most versatile on the market. Set them level, have the receiving end raised and in addition get extra stacking height.

These features pay off in actual operation, yet they cost no more. Buy Elton advanced design equipment and get these advantages.


A-SERIES—ALUMINUM

HUSKY, JR. STATIONARY

F-SERIES—

BULK FERTILIZERS—
GRAVEL—SAND—LIMESTONE

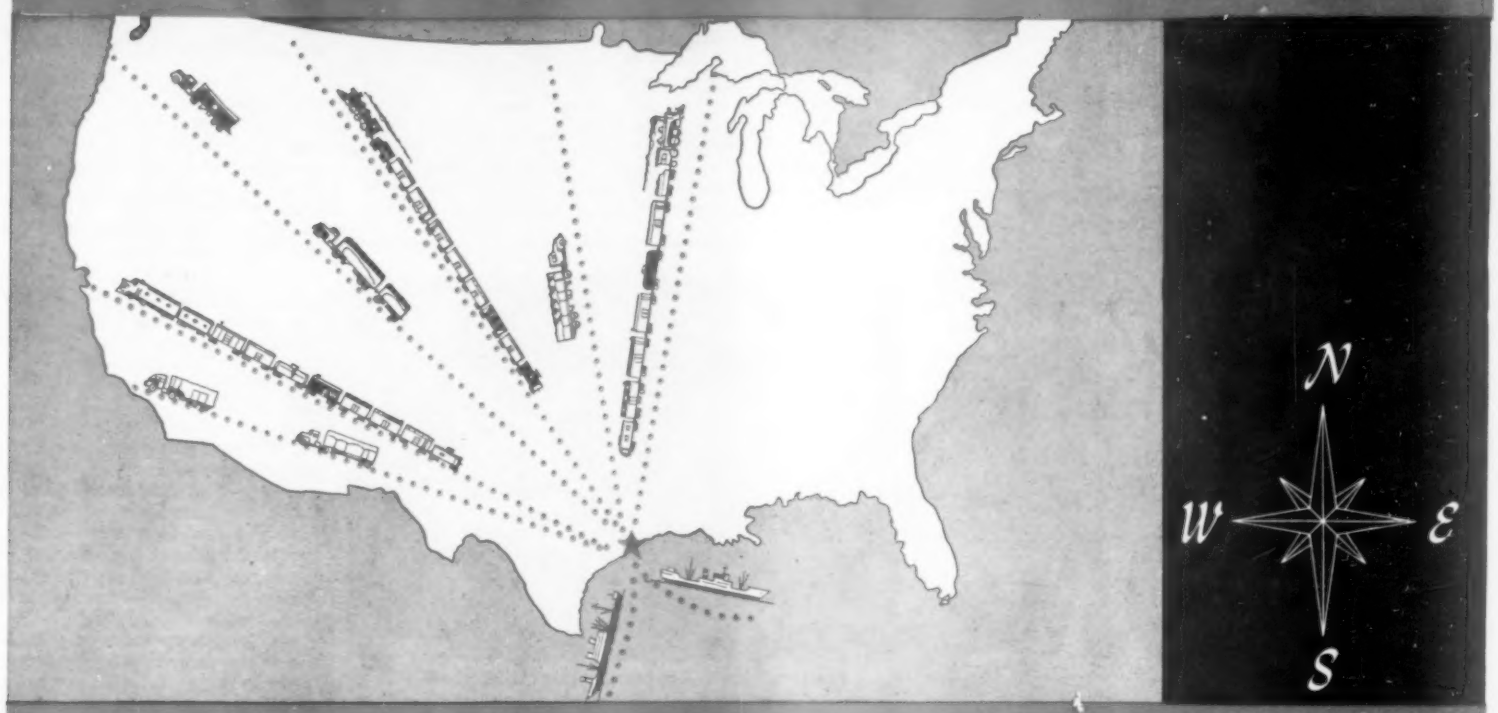
CHANTLAND MFG. CO.
MANUFACTURERS OF MATERIALS HANDLING EQUIPMENT FOR MODERN INDUSTRY
HUMBOLDT IOWA

ASK FOR COMPLETE INFORMATION . . .

FREE CATALOG

IT'S ECONOMY WISE TO JERSEEIZE WITH JERSEE
VITAL-MIN a Pre-Mix
VITAMINS MINERALS
Made by the builders of VITAMINIZED and MINERALIZED CONCENTRATES since 1922.
Jobbers and Warehouses From Coast to Coast
THE JERSEE CO. MINNEAPOLIS MINN.
WRITE TODAY FOR DEALERS SALES HELPS!

Better SERVICE



WITH CORONET DIKAL

Texas City is the only dicalcium production point west of the Mississippi River. As a consequence, all feed manufacturers in the western half of the United States enjoy better service and geographical advantages by using Coronet DIKAL.

Coronet Dikal is 18.5% analysis, all of which is biologically usable phosphorus. And Coronet's reputation for quality and service assures the kind of product you want, *when you want it . . . and in any desired quantities.*

Let us figure the cost of Dikal delivered to your plant

DIKAL
CORONET DICALCIUM PHOSPHATE

DIKAL is produced by Texas City Chemicals, Inc. under the management of

Coronet Phosphate Company

NORFOLK 1, VIRGINIA

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

SD SMITH DOUGLASS

BAGGED FEED PRODUCTION LINE—Although bulk sales are said to have brought new business to J. H. Wake Feed Mill, Oskaloosa, Iowa, 75% of the feed sold is sold in bags. Shown here is the bagged feed production line. Phil Wake, who operates the firm with his father, said bagged feed sales did not decline when bulk was added.

plains Phil Wake. "We can pellet our own feeds, and we can also do custom pelleting. By making soft pellets, too, we'll expand our market."

Phil Wake says that his father and he have been talking about this type of operation since he returned from the service in 1945. Both felt that the small and medium-sized feed manufacturer could find a profitable niche in the home market by being equipped to handle all feed processing right in the area, and doing it the way individual customers want it done. The success of the Wake operation has proved their judgment sound in a fast-changing, competitive market.

"With our 18-ton, pneumatic-type, bulk delivery truck, we believe we can keep our larger feeders supplied quickly with bulk feed and also keep the supply tanks at our branch stores filled," says Phil Wake. "And we'll be pushing the complete feed idea to hog raisers, too, as a time saving and profitable idea for them."

SIDELINE — A profitable sideline arising out of the bulk business of the J. H. Wake Feed Mill has been the sales of feeders to farmers of the area. In recent months, more than 25 large feeders of this type have been sold. The firm has also sold as many as 50 metal hog feeders monthly of the 85-bu. and up size.

A Wenger molasses blender is used considerably, especially to premix molasses and soybean meal.

"One interesting thing about our operation is that when we went into bulk operations, our bag sales did not decline," says Phil Wake. "That indicates we picked up new business, and our books show it. We have many new customers we did not previously serve. Now we get 100% of the feed business of many of them.

Bagged feed is shipped to branch stores by semi-trailer. The semi is loaded with a Handipiler.

Along with its sales of bulk feeds, the Wake firm is pushing large hog feeders. It has several wooden types on display outside its Oskaloosa mill. Here are sizes and prices:

24 feed holes, 260 bu., $276.
20 feed holes, 125 bu., $1.99
16 feed holes, 100 bu., $170

More than 25 of these have been sold in recent months. The firm has also sold as many as 50 metal hog feeders monthly from 85-bu. capacity up. Metal feeders cost from $125 up.

When a farmer wants bulk feed but has no feeder, the firm supplying the feed is the natural place to look for a feeder, Mr. Wake said. "We plan on selling many extra feeders annually at our mills and stores. These automatic feeders help farmers save money, too, just as our bulk feed does.

"We have two salesmen who work out of our stores," says Mr. Wake. "They visit farmers, help them with feeding problems and sell our feeds and services. In this way we keep in close touch with practically all farmers in our area. By developing our territory close to home, we are building a fine nucleus around each branch location. Now with bulk storage and service, we feel we can extend that perimeter somewhat, and our profit, too."

The J. H. Wake Feed Mill uses considerable newspaper and direct mail advertising to keep farmers aware of the various feeds and services which the company offers. Some radio advertising is also used.

New!

from International Paper

TYON

An improved anti-skid treatment for Multiwall Bags!

Here is an anti-skid treatment for multiwall bags that really works. Inclined Plane tests of bags treated with "Tyon" show:

- *"Tyon" is 20% better than ordinary anti-skid treatments*
- *30% better than rough kraft*
- *40% better than standard kraft*

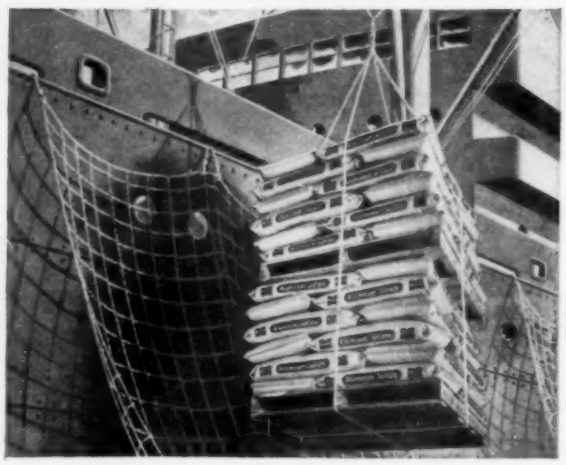
You can cut breakage loss—and danger from slipping, creeping stacks in the warehouse and on your trucks. Bags treated with "Tyon" stack to stay. They cling to pallets. Offer firm grip for fast, safe loading and unloading.

Remember, you get lots of advantages—with a lot of savings—when you specify multiwall bags treated with "Tyon"... another product of International Paper's long research and experience.

TYON
Look for this trademark on the bags you buy.

Send coupon for samples and full information

Up ramps and over bumps, bags treated with "Tyon" sit tight. *Allow faster handling.*



Stacked high or riding a sling, they cling. *Safer—resist slip and creep.*

Over bumpy roads, around curves, they ride—don't slide. *Eliminate breakage—speed delivery.*

your most dependable source of supply . . .

INTERNATIONAL PAPER

BAGPAK DIVISION, N.Y.17, N.Y.

INTERNATIONAL PAPER COMPANY
220 East 42nd St., New York 17, N.Y.
Room 1404B
Please send samples and Tyon information.

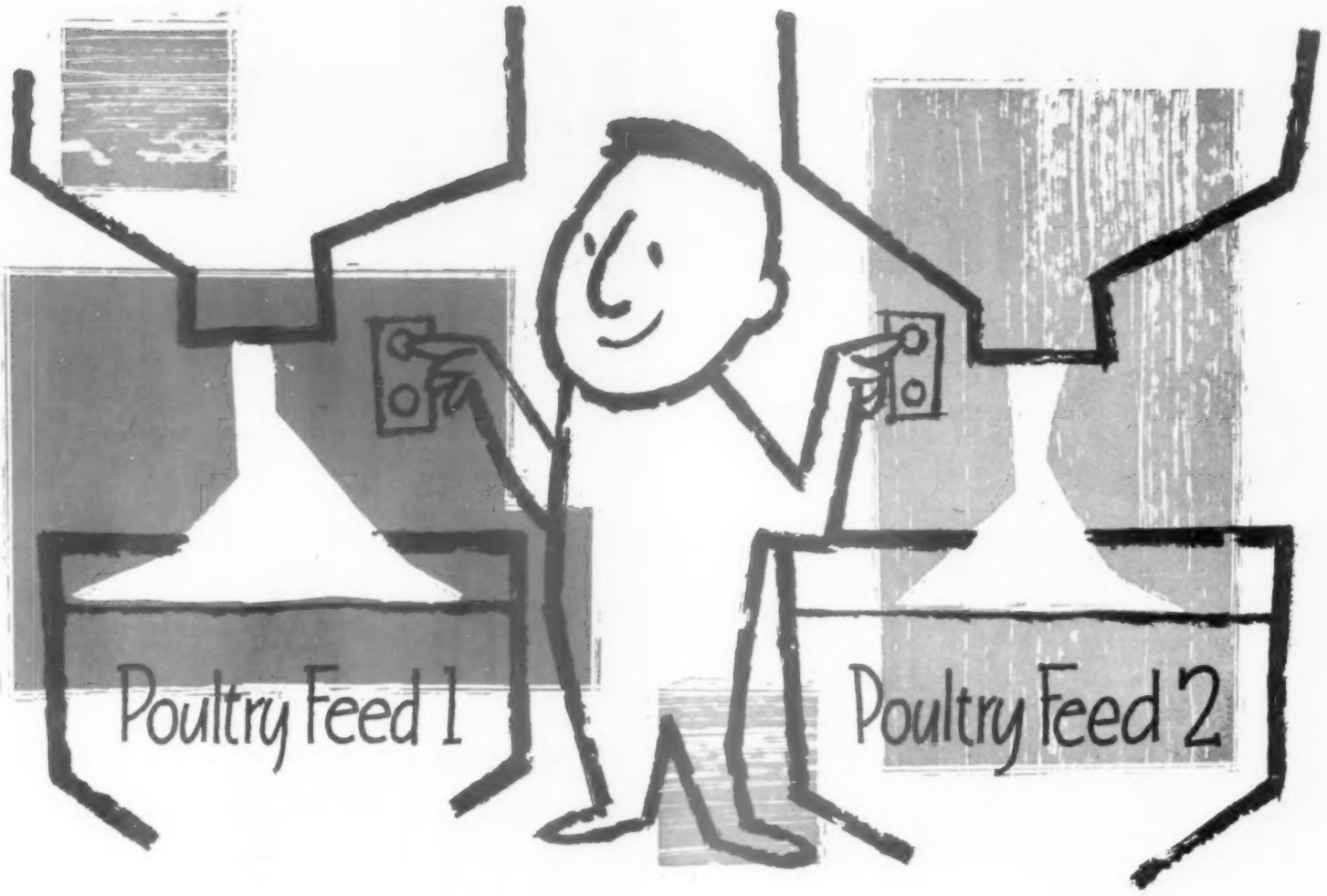
Name_____

Firm_____

Address_____

KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Board of Trade VIctor 2-4671
KANSAS CITY, MO.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS



MIXING FLEXIBILITY ASSURED

Morton Iodized Mixing Salt provides great flexibility in mixing poultry feed formulas

As you know, the recommended iodine content of most poultry feeds is about the same from formula to formula and the minute amount required should be premixed to assure uniform distribution in formula feeds. On the other hand, manganese requirements vary considerably and the amount used is much larger, thus minimizing the need for extremely accurate premixing. Therefore, it often pays to add the iodine with a premix, such as Morton Iodized Mixing Salt, while adding manganese and other ingredients separately.

Another big advantage of using Morton Iodized Mixing Salt is that it contains Cuprous Iodide*. Armour Research Foundation has proven this compound to be a superior source of nutritionally available iodine, and animals and poultry retain it longer. Also, Cuprous Iodide is stable. There's no need for a stabilizing additive. It is insoluble in water which reduces *leach-out* in pelletizing to a minimum . . . nor does the iodine content "fade" on the way from the mill to feedbunk. Thus, Morton Iodized Mixing Salt guards your analysis at all times.

In addition to Iodized Mixing Salt, Morton also makes Trace-Mineralized Mixing Salt and extra-free-flowing Special Mixing Salt. Morton's nation-wide distribution enables you to get these products quickly anywhere in the U.S.A.

**Cuprous Iodide is patented for use by the Morton Salt Company (pat. No. 2,772,167)*

MORTON MIXING SALTS

IODIZED MIXING TRACE-MINERALIZED MIXING SPECIAL MIXING

AGRAData

T. M.

Pfizer

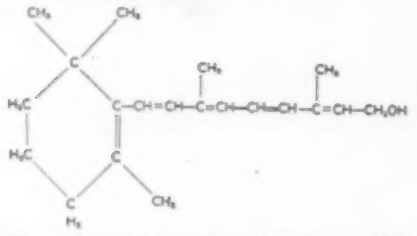
CHAS. PFIZER & CO., INC.
Agricultural Research and Development Dept.
Terre Haute, Indiana

Science comes to the farm through Research

Vitamin A

What It is

Vitamin A in pure form is a pale yellow crystalline compound. In nature it occurs only in the animal kingdom. It is an alcohol of high molecular weight with an empirical formula of $C_{20}H_{30}O$ and structural formula of



The compound contains a betaionone ring and an alcoholic side chain. The four conjugated double bonds in the side chain make it theoretically possible to have 16 cis-trans (geometric) isomers. Up to the present time, six isomeric forms have been characterized with respect to chemical and physical properties, although only the all-trans and the 5-cis (neo-vitamin A) forms have been biologically evaluated. It is possible that all of the isomers may exist in nature under certain conditions.

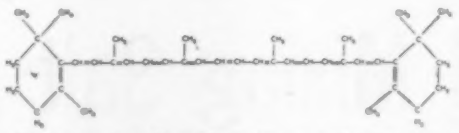
Chemistry of Vitamin A

Pure vitamin A crystallized from propylene glycol or ethyl formate melts at 63-64° C (1) and distills in the range of 120-125° C at 0.005 mm (2 & 3). In natural sources, vitamin A usually occurs in esterified forms which distill in the range of 200-240° C at 0.001 mm. The acetate ester has a biological potency of 2,907,000 units per gram (4). When dissolved in isopropanol, it shows a strong absorption in the ultraviolet range, characteristic of all vitamin A, having a sharp maximum at 325.5 millimicrons with an extinction coefficient E 1% 1cm of 1535 (5). (The unit of vitamin A is defined as 0.344 mcg of crystalline all-trans-vitamin A acetate, equivalent to 0.3 mcg of vitamin A alcohol (6).

Provitamins A—Carotenoids

Animals derive much of their vitamin A requirement from plant sources which contain a wide variety of carotene and xanthophyll pigments, but no true vitamin A. Some of these compounds can be converted to vitamin A by the animal and are therefore termed provitamins A. Beta-carotene, because of its wide distribution and relative abundance, is the most important provitamin A compound.

Of the other known biologically active carotenoids, only alpha-carotene, gamma-carotene and cryptoxanthin are of practical nutritional value. The structural formula for beta-carotene is:



The corresponding bio-potency and some physical constants for various vitamin A and provitamin A compounds adapted from literature values are given in Table 1.

METABOLISM OF VITAMIN A

Absorption, Transport and Storage

It is indicated that one molecule (7 & 38) of beta-carotene in the ration is converted to one molecule of vitamin A alcohol and smaller inactive fragments in the intestinal wall. Vitamin A esters are hydrolized by pancreatic lipase to vitamin A alcohol, absorbed as the alcohol and partially re-esterified in the intestinal wall. After absorption the vitamin A alcohol and esters are transported in the lymphatic stream, rather than the portal vein, to the general circulation. The liver and other tissues remove the excess and maintain normal levels in the blood. Vitamin A is stored in the liver predominantly as the ester form.

During transportation in the blood and metabolism in the cells, carotenoids and probably vitamin A are bound to plasma proteins. Serum protein fractionation (8) studies suggest that vitamin A ester, vitamin A alcohol and the carotenoids—lutein and beta-carotene—are associated with three separate specific protein complexes. In cattle (9) serum carotene is bound in a protein complex with the authors called "caroto-albumin". In the chicken blood serum xanthophyll is also bound to protein (10). It is entirely possible that there is a high degree of specificity in plasma proteins with respect to their ability to absorb carotenoids and vitamin A and that differences in efficiency of different species in their utilization of carotene and possibly of different isomeric forms of vitamin A may be caused by differences in the configuration of the plasma proteins. This protein specificity may explain why "white fat" animals, such as pigs and rabbits, store no carotenoids in fatty tissue whereas "yellow fat" animals, such as cows, store carotene and poultry store xanthophylls.

Role of Vitamin A in Vision

The energy of dim light, which strikes the eye, is transformed into nerve impulses by the visual purple (11 & 12) on the outside end of the retina. Color and light of high intensity are perceived by the cones of the retina.

Rhodopsin, the visual purple, bleaches out under the influence of light and regenerates in the absence of light. Rhodopsin is a carotenoid-albumin with an absorption maximum at 500 millimicrons. The prosthetic group, retinene, is vitamin A aldehyde. Under the influence of light the red color disappears and an unstable orange compound, "transient orange," is formed. This changes, probably in the dark process, to "indicator yellow" which appears to be a loose protein

Table 1

Properties of Vitamin A and Provitamin A Compounds

Compound	Formula	Mol. wt.	M.p.	$E^{1\%}_{1cm}$	Bio-potency Million I.U./gm
Vitamin A alcohol (all-trans)	$C_{20}H_{29}OH$	286.4	64°	1835*	3.33
Vitamin A acetate	$C_{20}H_{29}OCOCH_3$	328.5	57 - 58°	1550*-1	2.907
Vitamin A Palmitate	$C_{20}H_{29}OCOC_{15}H_{31}$	524.8	28 - 29°	975*-2	1.82
Neovitamin A alcohol (2-cis)	$C_{20}H_{29}OH$	286.4	59 - 60°	1673*-3	2.51
Beta-carotene	$C_{40}H_{56}$	536.0	181-182°	2510*-4	1.667
Alpha-carotene (all-trans)	$C_{40}H_{56}$	536.0	187-188°	2670*-5	.883
Gamma-carotene (all-trans)	$C_{40}H_{56}$	536.0	177-178°		.700
Cryptoxanthin (all-trans)	$C_{40}H_{55}OH$	548.0	169°	2470*-6	.950

*Ethanol, 325.5 millimicrons; *-1 Ethanol, 326 millimicrons; *-2 Ethanol, 325-328 millimicrons; *-3 Isopropanol, 328 millimicrons; *-4 Iso-octane, 451 millimicrons; *-5 Iso-octane, 446 millimicrons; *-6 Hexane, 451.5 millimicrons.

Table 2

Comparison of Excess or Deficiency of Vitamin A (12)

Organ or tissue	Avitaminosis A	Hypervitaminosis A
Eyes	Xerophthalmia—abnormally dry and lusterless condition of eyeball	Exophthalmia—abnormal protrusion of eyeball
Membranes	Kerathinization in mucous membranes—to render, or to become, horny	Mucous cell formation in keratinized membranes
Bones	Defective modelling and cancellous structure	Softening and fractures
Reticulo-endothelial system	Swelling of Kupffer cells—type found in walls of liver sinusoids	Deposition of fat in Kupffer cells and spleen
Blood	Possibly slightly increased clotting time	Hemorrhage, associated with greatly increased clotting time
Reproduction	Resorption or congenital abnormalities	Resorption or congenital abnormalities
Skin	Thinning	Temporary thickening

compound of retinene. Retinene is extractable from the visual yellow with chloroform, and can also be obtained from rhodopsin through acid or alkali hydrolysis. The visual yellow breaks down further to vitamin A and a specific protein. In the dark a partial re-synthesis of rhodopsin occurs. The pigmented layers of the eye contain large amounts of vitamin A which is used for synthesis of rhodopsin. Vitamin A deficiency therefore causes, as one of its first symptoms, a decreased ability for dark adaption since not enough vitamin A is available for the synthesis of rhodopsin.

ROLE OF VITAMIN A IN NUTRITION

Deficiency Manifestations in Livestock

Chickens. On a severely deficient diet symptoms of vitamin A deficiency in chicks (13) begin to appear in about three weeks. Growth is markedly retarded and chicks show general weakness, emaciation, staggering gait and ruffled plumage. Resistance to infection is reduced and mortality is increased. Secretions of intestinal mucous glands, tear glands and salivary glands fail. An opaque appearance caused by keratinization of the third eyelid may be observed. Infection may occur, resulting in production of viscous fluid which may cause eyelids to stick together.

Pathological lesions observed on autopsy are confined largely to mucous membranes of the mouth, pharynx, esophagus and respiratory and urinary systems. Creamy white pustules often are found on the roof of the mouth and along the esophagus sometimes extending into the crop. Ureates accumulate in the ureter and in kidney tubules, causing these organs to become enlarged and creamy white in color.

In mature fowl symptoms noted in chicks may develop much more slowly, but eye disorder often becomes more acute. Egg production and hatchability are markedly reduced.

Turkeys. Symptoms of vitamin A deficiency in turkey (13) poults, in general, are similar to those described for chicks, but usually are much more acute.

Swine. Actual nutritional deficiency (14) may exist without the appearance of any definite symptoms. A positive diagnosis should seldom be made on the basis of observation of only one of the clinical effects which are expected to follow the deficiency in question. Clinical symptoms of vitamin A deficient diet for swine include: slow or interrupted growth, lameness or stiffness, impaired reproduction, dead or weak offspring at birth, incoordination of movement, head tilted, extreme weakness of back, brown greasy exudate and later—night blindness and constriction of optic nerve.

Beef and Dairy Cattle and Sheep. First easily detected (16) clinical symptom of vitamin A deficiency is night blindness. When gross night blindness is evident, vitamin A in the blood is very low, and liver reserves approach exhaustion. The next conspicuous symptoms usually developed are muscular incoordination, staggering gait, and convulsive seizures probably caused by elevation of the cerebro spinal fluid pressure, which also results in papillary edema. Other localized paralyses may also occur. Excessive lacrimation rather than xeropthalmia is the rule in ruminants. Unless death in convulsion or from intercurrent disease intervenes, the cornea of the eyes becomes keratinized and may, if subjected to infection, develop ulceration. Severe diarrhea in young stock and intermittent diarrhea at advanced stages of deficiency in adults are characteristic. Cystic pituitary glands are common in young deficient animals. In fattening cattle, generalized edema or anasarca may occur. In chronic severe deficiency, structural changes occur in the retina and in epithelial tissues. Degenerative changes in the kidney and degeneration of testicular germination epithelium have often been demonstrated.

Vitamin A deficiency in males of breeding age leads to a decline in sexual activity. Sjerbatozoa decrease in numbers and motility, and there is a marked increase in abnormal forms.

In the lactating dairy cow vitamin A levels should always be at an optimum level to permit adequate vitamin A levels in the milk. (See Table 2.)

Requirements of Vitamin A and Carotene By Various Animals

The requirements of vitamin A and provitamin A for various domestic livestock are given in Table 3 as taken from the National Research Council's latest published requirements (13, 14, 15, 16 & 17).

DETERMINATIONS OF A AND PRO-A

The three basic procedures in general use today are biological, physical and chemical. The merits and limitations of each are only briefly outlined.

Biological

This type of assay employs the growth of rats and chicks, or changes in the vaginal epithelium of the female rats as a measure of vitamin A potency. Test groups are fed graded levels of U.S.P. vitamin A reference solution and the unknown sample and comparative growth noted.

To determine the bio-availability of vitamin A preparations, blood, liver and fecal levels, as well as cerebro-spinal fluid pressure measurements have been used. Because animal assays are slow and expensive, they are not routinely used.

Physical

The ultraviolet absorption at 325 millimicrons exhibited by vitamin A forms the basis for the determination of this vitamin in oils and concentrates. In 1947, Morton and Stubbs (18 & 19) published their geometrical method for correcting the absorption curve of vitamin A oil for impurities.

The United States Pharmacopeia (U.S.P.) adopted the spectrophotometric method including a modified Morton-Stubbs correction in Vol. XIV of the 1950 edition. Multiplying the corrected absorbency value at 325 millimicrons by 1900 gives USP units. The factor 1900 gives good agreement with bio-assay values, although slight variations of this factor are in use in other countries.

The vitamin A equivalent of each individual carotenoid is not exactly known, since their utilization by animals is a function of the plant source, species of the animal and its nutritional state at the time. However, the assigned value of 0.6 mcg of beta-carotene is equal to one USP unit of vitamin A.

Although the spectrophotometric method is the most accurate for determining true vitamin A potency, its one serious limitation is that it cannot be used at a potency of less than 1000 units per gram. This prevents its use at feed levels.

Chemical

The antimony trichloride (blue color) method of Carr and Price (20) is both simple and rapid. It is the procedure most widely used today. Although very sensitive, the major disadvantage of the method is a lack of specificity for vitamin A. Many carotenoids and some biologically inactive vitamin A impurities also produce a color with the reagent.

The importance of analyzing vitamin A supplements by both the Carr-Price and the spectrophotometric methods may be seen in the following table. A pure preparation will give essentially the same value by both procedures. The difference between Carr-Price and the spectrophotometric values increases with increasing product impurity.

Table 4

Difference Between Carr-Price and Corrected Spectrophotometric Value

	Carr-Price	Corr. Spec.	C-P/Spec.
Fish liver oil A	15,900	13,600	1.19
Fish liver oil B	15,900	9,000	1.40
Product N (wax)	30,200	25,200	1.20
Product R (gelatin)	371,000	333,000	1.12
Product P (gelatin)	287,000	281,000	1.02

(All values are in units/gram)

Determination of Vitamin A in Mixed Feeds

The present A.O.A.C. (Association of Official Agricultural Chemists) official method (1951)

Table 3

Requirements of Carotene for Swine

(mg carotene per pound feed)

Market stock—body weight						All breeding stock
25	50	100	150	200	250	
0.25	0.31	0.38	0.44	0.53	0.60	2.5

Requirements of Carotene for Dairy Cattle*

(mg per pound of feed)

Body Weights												
50	100	150	200	400	600	800	1000	1200	1400	1600	2000	2400
Normal growth of dairy heifers												
	2.0	1.5	1.3	1.5	1.6	1.7	1.8	2.0				
Maintenance of mature cows												
						2.3	2.5	2.7	2.7	2.8		
Maintenance of breeding bulls												
								2.7		2.9	3.0	3.1

*Lactating cows at any weight, 1.2 mg carotene

Requirements of Vitamin A or Carotene for Sheep

	Body weight							
	60	70	80	90	100	120	140	160
EWES—non-lactating and first 15 weeks of gestation								
Vitamin A (I.U./lb feed)					371	385	397	406
Carotene (mg/lb feed)					0.7	0.7	0.7	0.7
EWES—last 6 weeks of gestation								
Vitamin A (I.U./lb feed)					610	661	704	771
Carotene (mg/lb feed)					1.5	1.6	1.7	1.8
EWES—first 8 to 10 weeks of lactation								
Vitamin A (I.U./lb feed)					504	555	600	661
Carotene (mg/lb feed)					1.3	1.4	1.5	1.6
EWES—last 12 to 14 weeks of lactation								
Vitamin A (I.U./lb feed)					610	661	704	771
Carotene (mg/lb feed)					1.5	1.6	1.7	1.9
EWES—replacement lambs								
Vitamin A (I.U./lb feed)	258		289		341	408		
Carotene (mg/lb feed)	0.6		0.7		0.8	1.0		
RAMS—lambs and yearlings								
Vitamin A (I.U./lb feed)			289		313	331	352	386
Carotene (mg/lb feed)			0.7		0.8	0.8	0.9	0.9
LAMBS—fattening								
Vitamin A (I.U./lb feed)	215	217	227	228	241			
Carotene (mg/lb feed)	0.4	0.4	0.4	0.4	0.4			

Requirements of Vitamin A for Chickens*

(U.S.P. units** per pound of feed)

Starting chickens 0-8 weeks	Growing chickens 8-18 weeks	Laying hens	Breeding hens
1,200	1,200	2,000	2,000

*for turkeys, starting, growing or breeding, 2,400 U.S.P. units.

**May be vitamin A or provitamin A.

Requirements of Carotene for Beef Cattle*

(mg for pound of feed)

Body weight											
400	500	600	700	800	900	1000	1100	1200	1400	1600	1800
Normal growth heifers and steers											
2.0		2.2		2.5		2.8					
Bulls, growth and maintenance (moderate activity)											
		2.2		2.8		3.0		3.3	3.5	3.7	4.2
Wintering weanling calves											
2.2	2.3	2.4									
Wintering yearling cattle											
		2.2	2.5	2.7	3.0						
Winturing pregnant heifers											
			2.1	2.4	3.0	3.3					
Wintering mature pregnant cows											
				2.2	2.7	3.3	3.7	4.0			
Fattening calves finished as short yearlings											
2.0	2.1	2.2	2.3	2.4	2.6						
Fattening yearling cattle											
		2.0	2.0	2.2	2.2	2.3	2.4				
Fattening two-year-old cattle											
				2.0	2.1	2.2	2.3	2.5			

*Cows nursing calves, first 3 to 4 months after parturition, 11.0 mg.

continuation of Chas. Pfizer & Co., Inc. advertisement from pages 48 & 49

calls for removal of vitamin A from feed by solvent extraction with hexane followed by chromotography and colorimetric determination. This was satisfactory for feeds containing marine oils and wax, or fat-stabilized vitamin A sources. However, since the advent of gelatine and pectin-stabilized preparations, hexane extraction is not satisfactory because these protective coatings prevent penetration by organic solvents.

The A.O.A.C. is collaboratively testing a saponification procedure and the indications are that the present hexane extraction method may be deleted and a saponification method adopted.

The most widely accepted means of determining carotenes involve extraction with a hexane-acetone mixture followed by chromotography and subsequent spectrophotometric estimation by absorption at 436 millimicrons, or with a 440 or 450 millimicron filter in a colorimeter.

STABILITY OF A AND PRO-A

Vitamin A and carotene are readily attacked by oxidation and ultraviolet light with resulting loss of biological activity. When heated in an inert atmosphere, such as nitrogen or carbon dioxide, both beta-carotene and vitamin A in oil solutions show good stability. Since this ideal situation never is found in normal practice, considerable care must be taken to preserve the vitamin A activity of feeds.

A further destructive factor is the influence of minerals. It is well known that minerals, particularly the elements manganese, cobalt, copper iron and iodine catalyze the oxidative destruction of vitamin A and carotene. Recent unpublished work with mineral concentrates indicates that zinc may also exert a catalytic effect. This destructive effect of minerals is apparently related to their chemical form and environmental moisture.

It is not unusual to find the vitamin A potency completely destroyed in as little as two to seven days when oil solutions of the vitamin are blended into some mineralized supplements. In the commercial pelleting of feeds, where heat, added moisture, trace minerals and exposure to air all combine to destroy vitamin A, potency losses of 10 to 30 per cent are not uncommon during the pelleting operation itself.

Research studies with pelleted feeds indicate that factors such as the degree of steaming, exit temperature of the pellets, nature of the ration and type of mineral salts used (insoluble versus soluble) all influence the stability of vitamin A and carotene.

About a decade ago, vitamin A supplement manufacturers, recognizing this stability problem, began developing techniques for stabilizing vitamin A and carotene. As a result of this work, there are today a number of different types of "stabilized" vitamin A products. While many of these products definitely have better stability than fish oil when incorporated in feeds, there are only a few which exhibit good stability in both mineral concentrates and pelleted feeds.

With the advent of synthetic vitamin A, the acetate ester was most commonly used in feeds. Early work with gelatin stabilized vitamin A acetate showed good stability in low moisture supplements and feeds, but retention in high moisture feeds and pellets was poor.

Further research studies revealed that the palmitate ester of vitamin A, although more difficult to produce, could overcome these problems. For this reason, vitamin A, palmitate is widely used by the feed industry today.

CONVERSION EFFICIENCY OF PROVITAMINS A

In all species fat improves utilization of carotene and vitamin A. The usual fat levels in rations, however, are adequate for good absorption. As the carotene level is increased efficiency of utilization, as compared with that of vitamin A, is decreased.

Chickens

It is common to consider for chickens that one unit of carotene equals one unit of vitamin A. This is apparently correct at low levels, but there is some evidence to indicate that, at higher levels, and possibly at usual levels of feeding in practical rations, a unit of carotene may be somewhat less than one unit of vitamin A in biological value. It was found in chickens (21) that carotene at a level of 750 I. U. per lb. was 69 per cent digested and 15,000 I. U. per lb. was only 29 per cent digested. The minimum requirement (22) of chicks per I. U. of carotene was one-third higher than for I. U. of vitamin A.

Significantly better growth of broilers (23) has been shown when a practical broiler ration containing 2.5 per cent alfalfa was supplemented with vitamin A rather than with additional carotene from more alfalfa.

Because of the possibility that carotene may be somewhat inferior to vitamin A for chickens the carotene of feed ingredients is frequently calculated at one unit of vitamin A, or less, for one microgram of carotene to give an added margin of safety.

Turkeys

The comparative utilization of carotene and vitamin A is not established for turkeys. There are indications that the turkey utilizes carotene inefficiently. Chickens utilize carotene from freshly cut or dehydrated alfalfa four to five times as efficiently as turkey poults (24) on the basis of liver storage of vitamin A.

Using growth and liver storage of vitamin A as criteria, it was concluded that poults up to 8 weeks could utilize (25) vitamin A from black cod liver oil two times as efficiently and from synthetic vitamin A acetate four times as efficiently as an equivalent number of I. U. from carotene. At higher intakes much more vitamin A was stored in the liver when black cod liver oil or synthetic vitamin A was fed than when an equivalent number of I. U. of pure carotene was used.

Swine and Cattle

There appears to be fairly good agreement that vitamin A is utilized at least 2.5 times as efficiently (26) as an equivalent number of I. U. from carotene.

Carotene (27) from alfalfa was used one-eighth as efficiently as vitamin A on a weight basis at a minimum level for maintaining blood plasma and liver levels of vitamin A in dairy calves. On a unit basis, this would be 4 I. U. of carotene equivalent to 1 unit of vitamin A. At lower levels, for preventing physiological and histological changes, carotene was approximately one-fifth as efficient as vitamin A on a weight basis or on a unit basis, 2.5 I. U. of carotene equivalent to 1 unit of vitamin A.

The need for adequate vitamin A in feeds (28) for cows during gestation and in calf starters and milk replacer feeds is evident.

By feeding 1 million I. U. of carotene daily to Holstein cows during the last sixty days prepartum it was in most cases possible to prevent the fall in plasma carotene of the cow before calving and slightly decrease the drop in plasma vitamin A of the cow prior to calving; however, 1 million I. U. of vitamin A from fish oil per day completely prevented the drop in plasma vitamin A and produced an average increase. Feeding carotene to cows did not increase the plasma carotene of the calves, but doubled the plasma vitamin A of the calves. Feeding vitamin A to the cows had no effect upon the calf plasma carotene but increased the calf plasma vitamin A to twice the level obtained with an equivalent number of units of carotene in the maternal feed. Liver storage of vitamin A and total I. U. of vitamin A activity in the newborn calf resulting from feeding vitamin A to the cows was approximately 100 times as great as was produced with an equal number of I. U. of carotene. The data with a limited number of Guernsey cows and calves was not greatly different from the Holsteins with respect to plasma carotene and vitamin A levels. There was an indication that liver vitamin A may have been lower in Guernseys than in Holsteins when carotene was fed.

Feeding carotene to dry cows increased the carotene and vitamin A contents in the colostrum. However, when vitamin A was added to this ration there was three times as much vitamin A activity in the colostrum and two times the activity (29) in 3-day milk. The performance of the calves, judged by weight gains and freedom from scours, was improved in the calves from the cows which received alfalfa; however, vitamin A supplementation produced greater responses (30).

Along a similar line, calf scours were controlled (31) with vitamin A and niacin although the treatment did not control diarrhea, septicemia, or early white scours in newborn calves which came down and died within 24-28 hours.

Blood plasma vitamin A of normal newborn calves was always low (5 mcg per 100 ml) and returned to normal (14 mcg per 100 ml) the first day. Competely prevented was diarrhea in newborn calves by administering 500,000 units of vitamin A to cows (32) twice weekly three weeks before calving in herds where "three-day" scours in calves was high. These data all indicate the need for supplementing the calves' ration and that of dairy cows prior to calving with adequate vitamin A.

The same general considerations on vitamin A apply to beef cattle as to dairy cows. In the West, especially under drouth conditions, and in wintering cattle, adequate provision of vitamin A is a problem.

In the East, wintering of cattle may be a problem if good roughage is not available. The same is true of feeder cattle with low vitamin A reserves shipped from vitamin A-deficient areas for drylot fattening.

Records of calf crops in California (33) show a distinct correlation between calf crop and rainfall from 1934 to 1948. These records indicate that the calf crop varied directly with the amount of annual rainfall which also is directly related to the amount of vitamin A activity in green forage.

With the advent of vitamin A supplementation in 1948, however, the calf crop became less dependent upon the available rain. In the last six years, the calf crop has been consistently 20 per cent greater than that of the best years included in the previous 14-year period. Even in an extremely dry year (1950) the calf crop was 17 per cent better than the best year of the previous period. This improvement (33) is attributed largely to the use of vitamin A supplementation during the dry periods.

BIOLOGICAL VALUE OF VARIOUS FORMS OF A

Isomeric Forms

The cis-trans isomers of vitamin A have been extensively investigated. In fish liver oils there is a mixture of the cis and trans forms. Pure synthetic vitamin A is the all-trans form.

There are differences in the biological value of the different isomers of vitamin A. Since the U.S.P. has used pure all-trans vitamin A as the reference standard, the bio-potency of other isomers is expressed in terms of the all-trans form.

Neo-vitamin A is only 75.3 per cent (34) as potent as all-trans form for rat growth and liver deposition. It is well established that vitamin A sterioisomerizes in the body, and that, after a short time in the body, any differences in cis-trans configurations would probably be removed by these transformations. It would, therefore, appear that any differences in biological value would result from differences in the early stages of vitamin A metabolism, such as differences in gastro-intestinal stability, efficiency of absorption, and transportation in the blood.

Physical

In addition, there is a great deal of evidence that the physical state of vitamin A has a marked effect upon the efficiency of utilization. Numerous clinical reports with humans show that aqueous emulsions of vitamin A are more efficiently utilized than oil solutions, according to evidence based on higher blood serum and liver levels and lower levels in fecal excretion. Similar results have been reported with rats, with dairy cows and with chickens. Vitamin A dispersed in gelatin beadlets has been found superior to oil solution for rats and chicks (35) an observation which was recently confirmed in rats (36) and in chicks (37).

Recent investigations with beef cattle—similar to rats and chicks—show a greater blood and liver response to aqueous and gelatin dispersions than to oil solutions (38).

Particle size of the vitamin A within the gelatin beadlets has been found to affect the efficiency of utilization (35). In rats, particles of vitamin A two microns or less in diameter dispersed in gelatin beadlets brought about 69 per cent greater liver storage than was obtained with an oil solution. With a 5 micron particle size the liver storage was 24 per cent greater, and with a 20 micron particle size the liver storage was approximately the same as with an oil solution.

Bibliography

1. J. G. Baxter and C. D. Robeson, Science 92: 203, 1940.
2. I. M. Heilbron, R. N. Heslop, R. A. Morton, E. T. Webster, J. L. Rea and J. C. Drummond, Journal of Biochemistry 26: 1178, 1932.
3. R. H. Carr and W. J. Jewell, Nature 131: 92, 1933.
4. J. G. Baxter, P. L. Harris, K. C. D. Hickman and C. D. Robeson, Journal of Biological Chemistry 141: 991, 1941.
5. H. N. Holmes and R. E. Corbet, Journal of the American Chemical Society 59: 2042, 1937.
6. United States Pharmacopoeia, Vol. XIV, 1950.
7. S. K. Kon and S. Y. Thompson, British Journal of Nutrition 5: 114, 1951.
8. J. Ganguly, N. I. Krinsky, J. W. Mehl and H. J. Deuel, Jr., Archives of Biochemistry and Biophysics 30: 275-282, 1952.
9. L. S. Palmer and C. H. Eckles, Journal of Biological Chemistry 17: 223, 1914.
10. G. Wald and H. Zussman, Journal of Biological Chemistry 122: 449, 1938.
11. H. R. Rosenberg, Chemistry and Physiology of the Vitamins, revised, Interscience, 1945.
12. T. Moore, Vitamin A, Elsevier, 1957.
13. National Research Council, Nutrient Requirements for Poultry, revised January 1954.
14. National Research Council, Nutrient Requirements for Swine, revised August 1953.
15. National Research Council, Nutrient Requirements for Dairy Cattle, revised 1956.
16. National Research Council, Recommended Nutrient Allowances for Beef Cattle, revised December 1950.
17. National Research Council, Nutrient Requirements for Sheep, revised 1957.
18. R. A. Morton and A. L. Stubbs, Analyst 71: 348, 1946.
19. R. A. Morton and A. L. Stubbs, Biochemical Journal 41: 525, 1947.
20. F. H. Carr and E. A. Price, Biochemical Journal 20: 497, 1926.
21. A. R. Kemmerer and G. S. Fraps, Journal of Nutrition 16: 309, 1938.
22. T. K. Wirth and D. Wanschen, Nordisk Medicin 4: 3425, 1939.
23. A. A. Camp, present before Association of Southern Agricultural Workers, 1955.
24. H. R. Gilbert and W. R. Hinshaw, Journal of Nutrition 8: 45, 1934.
25. R. Gurcay, R. V. Boucher and E. W. Callenback, Journal of Nutrition 41: 565, 1950.
26. F. B. Morrison, Feeds and Feeding 22: 861, 1956.
27. J. E. Rousseau, Journal of Dairy Science 37: 689, 1954.
28. A. A. Spielman, J. W. Thomas, J. K. Loosli, C. L. Norton and K. L. Turk, Journal of Dairy Science 29: 707, 1946.
29. A. A. Spielman, J. W. Thomas, J. K. Loosli, C. L. Norton and K. L. Turk, Journal of Dairy Science 30: 343, 1947.
30. A. A. Spielman, H. D. Eaton, J. K. Loosli and K. L. Turk, Journal of Dairy Science 32: 367, 1949.
31. P. H. Phillips, M. S. Lundquist and P. J. Boyer, Journal of Dairy Science 24: 977, 1941.
32. H. Bruce, North American Veterinarian 26: 602, 1945.
33. R. Dove and R. Miller, Western Livestock Journal, September 1954.
34. S. R. Ames, W. L. Swanson and P. L. Harris, Journal of American Chemical Society 77: 4143, 1955.
35. H. G. Luther, E. J. Gaett and G. O. Cragwall, Internationale Zeitschrift fur Vitaminforshung 23: 362-380, 1952.
36. J. Bruggemann and J. Tawes, Vitamine und Hormone 7: 1-9, 1956.
37. I. Ascarelli and A. Bondi, Journal of Agricultural Science 49: 113-119, 1957.
38. W. C. Sherman, G. O. Kuhn, E. A. White, W. D. Lewis, W. M. Reynolds and H. G. Luther, unpublished work of 1957.

Poultry House Litter As Protein Source in Steer Ration Tested

MACON, GA.—The use of poultry house litter as a source of crude protein in steer fattening rations is "not quite so economical as other protein supplements and tends to decrease the palatability of the rations as the amount of the litter is increased."

These are conclusions drawn from feed tests conducted by B. L. Southwell, Dr. O. M. Hale and Dr. W. C. McCormick at the Agricultural Experiment Station, Tifton, Ga.

The test was undertaken following preliminary research at the University of Arkansas, since the Georgia broiler industry has an "adequate source" of poultry house litter. In the test, the top 4 or 5 in. of litter from a house used to raise two batches of broilers was used after analysis indicated approximately 21% crude protein present. The litter, consisting of ground corn cobs, was run through a hammermill to reduce the size of the cob and obtain a uniform mixture.

With the analysis of the litter, it was decided to use twice as much in the test ration to equal the 41% protein of cottonseed meal.

Three Lots Used

Three lots of 10 steers each, ranging from 18 to 20 months old, weighing about 700 lb., were fed in open lots with mineral mixture free choice, adequate water and shade confined to natural pine trees.

Each steer received a maximum of 8½ lb. Coastal Bermuda hay daily.

Lot 1 was fed a ration containing 30 parts poultry house litter and 70 parts cracked shelled corn; Lot 2 received 15 parts litter, 7.5 parts cottonseed meal and 77.5 parts ground snapped corn; Lot 3 was fed 15 parts cottonseed meal and 85 parts ground snapped corn. The test was conducted for 140 days.

The amount of the grain mixture fed each lot was determined by the group which ate the least on full feed so that the protein-energy equivalent of each ration could be equalized.

Daily Gains Similar

In their summary, the researchers reported there was little difference in the daily average gains made by the steers on the three treatments. Lot 1 gained 2.05 lb. daily and Lot 2 gained 2.07 lb. while Lot 3, the control group, averaged 2.14 lb. daily.

The feed consumed per hundred pounds of gain was 1,216.10 lb. for Lot 1; 1,209.10 lb. for Lot 2, and 1,125.93 lb. for Lot 3.

The cost of the feed per hundredweight of gain was figured at $20.54 for the 30 parts litter lot, $19.22 for the 15 parts litter lot and $20.15 for the control lot.

The prices of the feed, per ton, were estimated at $15 for the poultry house litter, $61 for the cottonseed meal, $40 for the ground snapped corn, $52 for the cracked shelled corn and $20 for the Coastal Bermuda hay.

The researchers pointed out that, because the digestibility of peanut hulls is less than half that of ground corn cobs, "it is logical to assume that peanut hull poultry house litter would be worth much less than corn cob litter, while poultry house litter of a wood shavings basis would be almost worthless."

DOES ALL THREE JOBS AT ONCE

New IOWA PORTABLE FEED UNIT

- GRINDS FEED
- MIXES FEED
- BLENDS FEED WITH MOLASSES

Unsurpassed for quality, low operating cost, low maintenance cost

SURPRISINGLY LOW PRICED!

WRITE TODAY FOR LITERATURE AND PRICES

IOWA PORTABLE MILL CO. OELWEIN, IOWA

"Since 1928, Best Built for On-The-Farm Service"

FEEDSTUFFS—*LEADER in its field*

More advertisers use FEEDSTUFFS than any other publication in the feed industry

LEADERS IN FORMULA FEEDS REGULARLY USE

SPENCER KELLOGG

OIL SEED MEALS

LINSEED OIL MEAL

•

SOYBEAN OIL MEAL

•

COTTONSEED OIL MEAL

SPENCER KELLOGG MEAL SALES OFFICES ARE LOCATED AT:

Bellevue 2-8201	Des Moines CH 4-7291
Buffalo CL 5850	Long Beach HE 2-4954
Chicago FR 2-3437	Minneapolis FE 5-4221
Decatur 5365	Philadelphia PE 5-8787

KELLOGG'S THE TEST TELLS 1894

SPENCER KELLOGG AND SONS, INC.

BUFFALO 5, N. Y.

Spencer Kellogg Mills are located at: EDGEWATER, N. J. • BELLEVUE, OHIO • CHICAGO, ILL. • DECATUR, ILL. MINNEAPOLIS, MINN. • DES MOINES, IOWA • EL CENTRO, CALIF. • LONG BEACH, CALIF.

DEVOLD Serving Mills & Breeders For Over 30 Years

Devolkod ® Vitamin Oils (Fortified Cod Liver Oils)
Devolkod ® Non-Dest. Cod Liver Oil U.S.P.
Devold Vitamin A & D Feeding Oils
Devold Vitamin A Oils
Peder Devold Wheat Germ Oil

"Stabilized" From Can to Carloads
ORegon 9-8400

PEDER DEVOLD OIL CO.
DIV. CLINTBROOK CHEMICAL CO., INC.
417-FM Fifth Avenue
New York 16, N. Y.
Plant: Lyndhurst N. J.

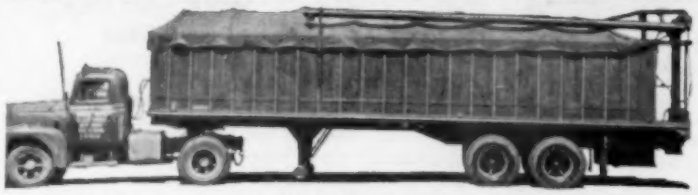
SW

FOR THE BEST IN

CRUMBLIZERS

SPROUT-WALDRON
MUNCY, PENNA.

NOW . . . Load or Unload Bulk Feed



with the PAMCO Back Saver

★ SEMI-TRAILER UNIT (above)

- Power take-off or gasoline engine operated.
- Minimum breakage of pellets.
- All hydraulic unit with all controls on rear corner of box.
- Pamco engineered swiveling and reversing discharge auger makes it possible to load without detaching auger.
- Swiveling discharge auger raised and lowered hydraulically.
- Each compartment can be unloaded individually. Conversion units can be mounted on your grain box.

★ BULK-BAG BOX

for complete information write:

PRODUCTIVE ACRES MFG. COMPANY

KEOTA, IOWA — PHONE: ME 63071

OTHER INSTALLATION POINTS: Delphi, Indiana; Cherow, Colorado, and Portland, Ore.

SAFEGUARD YOUR INVESTMENT RECOMMEND LATHROP'S CHICKS

Our production program is based on selling top quality chicks on contract, at wholesale. We are geared to fit the present day various types of integration programs. Good quality chicks and the finest service possible are assured in our size of operation.

If you want a good steady supply of the best White Cornish Cross, write or phone today for details. Over 30 years' hatchery experience will get the job done right for you. We would appreciate the opportunity to discuss our program with you.

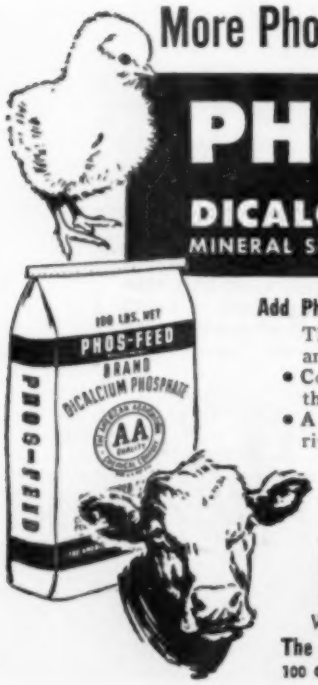
LATHROP'S HATCHERY, INC. Richmond, Ind.

P/S This Sign of PROMPT SERVICE

Means more than just quick shipment from our Memphis warehouse stocks of leading vitamins, antibiotics, growth factors and minerals. It means Personal Service, too, in helping with formulation, registration and in other ways when our customers need it. Call us.

PLESS & SHEAHAN — BOX 2654 — **MEMPHIS, TENN.** — TELEPHONE—JACKSON 6-6411

More Phosphorus—Less Fluorine in



PHOS-FEED®
BRAND
DICALCIUM PHOSPHATE
MINERAL SUPPLEMENT FOR FEED MIXTURES

Add Phos-Feed to your feeds for phosphorus content

The feed ingredient with phosphorus (18½% and 21%) and calcium in most available form

- Contains LESS fluorine, less than .004% (less than 40 parts per million!)
- A pure, economical source of phosphorus, derived from 99.9% pure Elemental Phosphorus
- Blends well . . . completely stable . . . stores without caking
- A *dependable* supply, assured by quality control from mine to user

PHOSPHATE FEED SOLUTION
Guaranteed Minimum Phosphorus—23.7%
Write or Phone for Information

WRITE OR CALL CHEMICAL SALES DIVISION
The AMERICAN AGRICULTURAL CHEMICAL Co.
100 Church St., New York 7, N. Y., Telephone BArclay 7-1400

POULTRY SCIENTIST HONORED—Dr. E. I. Robertson, left, John W. Eshelman & Sons, chairman of the American Feed Manufacturers Assn. Nutrition Council, presents the AFMA 1958 award of $1,000 for the outstanding contribution to poultry husbandry research to Dr. Frederic W. Hill, professor of poultry husbandry and animal nutrition, Cornell University, Ithaca, N.Y. The presentation was made at the recent meeting of the Poultry Science Assn. at Cornell. Looking on at right is Dr. H. M. Scott, University of Illinois, chairman of the Poultry Science Assn. awards committee and previous winner of the AFMA award.

Mississippi Researchers Review Work On Antibiotics for Bloat Prevention

STATE COLLEGE, MISS. — The use of antibiotics for bloat prevention has been under study at the Mississippi Agricultural Experiment Station for several years, and this work is continuing, with a number of new drugs tested.

B. F. Barrentine, C. B. Shawver and L. W. Williams brought information on the work up to date in a recent report in an experiment station publication, Mississippi Farm Research.

Excerpts from the researchers' latest report follow:

In an earlier report, it was noted that 50 to 75 mg. of procaine penicillin protected steers from bloat for one to three day periods. Aureomycin, Terramycin, bacitracin and streptomycin were ineffective in doses up to 300 mg. Since that time, some of these antibiotics have been retested, and other antibiotics have been tested. Many observations have been made on penicillin and salt-penicillin mixtures.

Erythromycin

It has been found that erythromycin is equally as effective as penicillin in preventing bloat in steers. Erythromycin was supplied by Eli Lilly & Co. and is sold under the trade name Ilotycin. Ilotycin and Ilotycin Thiocyanate were about equally effective in preventing bloat, and both antibiotics were about equal to penicillin. No commercial application has been made of this finding because of the higher cost of erythromycin as compared to penicillin.

Thiostrepton, an antibiotic produced and supplied by The Squibb Institute, was found to be ineffective in doses up to 300 mg.

In 1956 bacitracin was reported ineffective in preventing bloat in steers in doses up to 300 mg. This work was repeated in 1957 and the earlier findings confirmed.

Terramycin

Terramycin was reported in 1956 to be ineffective for preventing bloat in doses up to 300 mg. for steers grazing ladino clover. This has been retested in a number of trials, and in general the results look somewhat more promising.

In 1957 four trials were conducted comparing procaine penicillin with Terramycin. Selected steers which bloated regularly were used. The antibiotics were given by capsule in the first three trials. In the fourth trial they were added to 1 lb. of a mixed feed.

In the first trial, five two-year-old and older steers were each given 75 mg. of procaine penicillin (150 mg.

SW

FOR THE BEST IN

COOLERS

SPROUT-WALDRON
MUNCY, PENNA.

VAN DUSEN HARRINGTON
DIVISION
F. H. Peavey & Co.

GRAIN — SOYA BEANS — FLAX

Founded 1852

MINNEAPOLIS — Pv — DULUTH

SUPERIOR'S R. W. Marshall, VP in Charge of Operations and Joe P. Davis, Nutritionist, making a quality control test in the Company's modern, efficient laboratory.

Manufacturer Adds Meat Meal to Feed For Better Balance, More Sales

Superior Feed Mills, Inc. operate in Oklahoma City one of the finest feed plants in the southwest. All of the Company's quality feeds — for poultry, hogs and cattle — are originated and mixed at this fully-equipped plant.

From its beginning in 1908, Superior Feed Mills, Inc. — one of the country's leading feed manufacturers — has used meat meal extensively in their many feeds.

This company finds that meat meal in feed is necessary for a proper balance of animal and vegetable protein, which provides the high productivity customers today are demanding. Meat meal supplies necessary amino acids and vitamins, plus many additional growth factors, known and unknown.

Mixing and application is simple and economical, since the meat meal is received pre-ground and ready to add—with other ingredients—to the feed.

50% Meat and Bone Meal Provides:

- 32 Times The Calcium
- 6 Times The Phosphorus
- 2 Times The Riboflavin and Niacin
- 18 Times The Fat
- 1.14 Times The Protein
- . . . Found In Substitute Vegetable Products

write for FREE Booklets

Presents most recent data on economical use of meat and bone meal in feed.

nra **national renderers association**

30 N. LASALLE ST. FRanklin 2-3289 CHICAGO 2, ILL.

Pfizer P-50) by capsule on two consecutive days. Five steers of similar age were given 75 mg. of Terramycin (3.402 gm. Pfizer TM-10) by capsule on two consecutive days. The incidence of bloat three days before treatment and three days after treatment was 100 and 65%, respectively, in the penicillin group. For the Terramycin group, the corresponding figures were 95 and 70%. The antibiotics appeared about equal in this trial, although neither gave the protection desired.

In the second trial, four yearling steers were each given 75 mg. of procaine penicillin, and four were each given 75 mg. of Terramycin by capsule. Bloat incidence before and after treatment was 91.7 and 16.7% for the penicillin-treated group and 95.8 and 37.5% for the Terramycin group. Bloat control was considered good by both antibiotics, the penicillin showing a little better control.

In the third trial two groups of four yearling steers were each given 50 mg. of procaine penicillin and 50 mg. of Terramycin. Bloat incidence before and after treatment was 95.8 and 54.2% for the penicillin-treated group and 87.5 and 45.8 for the Terramycin group. It was noted that the 50 mg. level was less effective than the 75 mg. level. However, bloat control was fair, and there was no difference in the two antibiotics.

In the fourth trial, 75 mg. of each antibiotic was added to 1 lb. of a mixed feed and fed to the respective steers before grazing in the morning. A control group was fed the feed without an antibiotic. Bloat incidence before and after treatment was 83.3 and 45.8% for the penicillin-treated group; 83.3 and 87.5% for the Terramycin group; 79.2 and 79.2% for the control group. Bloat control was fair in the penicillin-fed group, but the Terramycin was not effective in this trial.

It was concluded that penicillin is somewhat more effective than Terramycin for prevention of bloat in steers grazing ladino clover.

Penicillin-Salt Mixture

Field testing of a penicillin-salt mixture was reported earlier from the Mississippi station. It was concluded that the free-choice feeding of a properly prepared penicillin-salt mixture was of definite value in reducing the incidence of bloat in cattle grazing legume pastures. These findings have in general been confirmed by many workers.

In 1957, nine selected steers were fed penicillin-salt for 28 days while grazing ladino clover. Incidence of bloat was 100% the day before starting penicillin-salt feeding. Bloat control was very good throughout the 28-day period. Average incidence during this period was 28%. The penicillin-salt mixture reduced bloat incidence by an estimated 70%.

It has been observed at Mississippi and by other workers that penicillin and penicillin-salt mixtures become less effective in preventing bloat after prolonged use. This decreased efficiency or "resistance" begins to occur after the cattle have been receiving penicillin continuously for 10 to 14 days. In spite of this "resistance" it is felt that penicillin is definitely helpful in reducing incidence of bloat if properly used.

Penicillin-salt feeding should not be started until it is needed. In other words, one should not anticipate a bloat situation and start feeding penicillin. When a bloat situation is anticipated, one should remove all salt and wait until bloat starts accurring before feeding the penicillin-salt. It should not be fed longer than is thought necessary.

In 1957, trials were conducted to

When you buy VITAMIN D_2 be sure you get all these features

1. A product easy to use and with good dispersion.
2. Controlled quality, assuring dependability.
3. A product backed by constant research.
4. Service helps for both you and your customers.
5. A product nationally known and accepted.
6. A source of Vitamin D at low cost.

What has this rat to do with the VITAMIN D_2 potency of your feeds?

"Whitey the Rat" plays an important part in FIDY Irradiated Dry Yeast quality control. Rat assays back the guaranteed Vitamin D_2 potency. This potency is shown on the analysis tag attached to every FIDY bag.

The cost of rat assay, batch after batch, is considerable. But so is the benefit derived—the protection of Vitamin D_2 potency for your feeds, minerals, and concentrates.

FIDY also gives you these important advantages: dispersion, free-flow, ease of use, etc. And yet, with all these features, the price of FIDY is low.

Investigate this all-yeast source of Vitamin D_2 for four-footed animals. FIDY is accepted and widely used by the feed trade.

For a FIDY sample and more complete information, address Desk FS-8238 STANDARD BRANDS INCORPORATED, Agricultural Department, 625 Madison Avenue, New York 22, N. Y.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

MOST POWERFUL ANTIOXIDANT
Griffith's G-12
FOR LOW-COST STABILITY OF FATS

SELLING TOOLS TO HELP YOU SELL MORE FEED!
FEED FOLDERS
FEED BOOKLETS
STORE POSTERS
MAILERS
LOCAL AD MATS
METAL SIGNS
SEND FOR PROOFS
Tobias Enterprises
326 North Michigan Ave., Chicago 1, Ill.

BUTLER

POLLYPHOS . . . OFFERS . . . TO YOU

A defluorinated phosphate of . . . proven high quality

America's leading feed and mineral manufacturers have used POLLYPHOS for years as a source of phosphorus. The texture . . . the blending characteristics . . . of POLLYPHOS . . . make this product a most desirable source of phosphorus supplement for . . . use in formulating all types of livestock and poultry feeds.

POLLYPHOS contains a phosphorus content of 19% . . . a minimum of 32% — maximum of 35% Calcium . . . and no more than .19% Fluorine.

POLLYPHOS has been tested for biological availability . . . proved to be a highly available source of phosphorus.

Butler Chemical Company is geographically located to insure prompt and dependable service to those areas West of the Mississippi.

Call, wire or write us, or the sales agent nearest you, for delivered price of POLLYPHOS to your plant.

Butler
CHEMICAL COMPANY

BUTLER CHEMICAL COMPANY
LOCATED ON THE HOUSTON SHIP CHANNEL

BC 5816

P. O. Box 938 • Phone ORchard 2-7587 • Galena Park, Texas

SALES AGENTS: Warner Brokerage Co., Inc., Minneapolis; Carroll Swanson Sales Co., Des Moines; James P. Sprigg Co., Los Angeles; White Star Concentrates Co., Portland; E. A. Towns Limited, Vancouver 1, B. C.

VISITOR FROM FINLAND—Dr. Aimo Ilmarinen, director of the grain department, Finland Storage Agency, Helsinki, Finland, left, recently visited the milling and baking technology laboratories at Kansas State College, Manhattan. He is pictured in the feed milling laboratory with Dr. J. A. Shellenberger, head of the department of flour and feed milling industries at K-State.

see if a penicillin-salt mixture would help prevent bloat in sheep. An average of three trials showed about a 40% reduction in incidence of bloat in ewes grazing ladino clover.

The decreased efficiency after prolonged use is not peculiar to penicillin. This "resistance" occurs with erythromycin and Terramycin. In limited studies it appears that the resistance is not specific for a single antibiotic but appears to be a generalized resistance.

Stability Noted

Properly prepared penicillin-salt mixtures are quite stable in storage. Mixtures stored for two years have shown no significant loss in potency. It appears that destruction of penicillin in a penicillin-salt mixture due to licking is not as severe as first reported. Some loss does occur in two to three days, but even after one week more than 80% of the original activity of the penicillin remains. It still seems desirable to put out not more than a two to three day supply of penicillin-salt, but there is no reason to discard the mixture unless it has become unsuitable due to rain or contamination.

Salt mixtures of penicillin, erythromycin and Terramycin have been subjected to stability studies under field conditions. All of these antibiotics show some loss of potency after being licked by cattle.

Railroad Announces 50% Rate Reduction

ROCKFORD, ILL. — The Toledo, Peoria & Western Railroad has announced that it will reduce its rates for hauling corn, wheat and soybeans from stations east of Peoria, Ill., to Peoria, Hollis or Kolbe, Ill., by more than 50%.

Making the announcement was J. Russell Coulter, president. He said the new rates will be effective on statutory notice.

The announcement said the railroad recently completed a station-by-station survey of elevators on its line east of Peoria to determine the pattern of grain shipments into the Peoria markets and found a demand for rates such as these to promote rail-barge movements and local industrial consumption of grain.

A like study is being made station-to-station along the T. P. & W.'s line west of Peoria, and the railroad plans to announce similar rates covering that territory, the announcement said.

Mr. Coulter said the railroad was adopting the reduced rates to remain competitive in the grain-hauling field and to further the present national trend toward complementary or interlocking modes of transportation.

Freight Cuts Sought In Pacific Northwest

PORTLAND, ORE. — The Pacific Northwest Grain Products Assn. and other farm organizations have been joined by Oregon's public utilities commissioner and director of agriculture in a joint effort to get approval for substantial reductions in rail shipping rates from Oregon, Washington, Montana and northern Idaho points to California destinations.

At a recent meeting in the Seattle offices of the North Pacific Freight Bureau, the chief rate analyst for the public utilities commission representing the two Oregon officials, recommended that the rail carriers approve adjustments in grain rates from the Pacific Northwest similar to those authorized recently from southern Idaho and Utah to southern California.

ONLY DAFFIN HAS . . . Q·C·H

QUICK CUSTOMER HARVEST

FOR NEW DAFFIN FEEDMOBILE OWNERS

MERCHANDISING HELP worth $5.00 for each new customer of your Mobile Mill Service.

Q. C. H. (Quick Customer Harvest) Plan is another Daffin "PLUS".

HOW IT WORKS: Daffin will award you additional Business Building help equivalent to $5.00 for each new customer obtained with your new Feedmobile during your first 120 days of ownership!

WHO IS ELIGIBLE: YOU . . . by taking delivery of a new Daffin Feedmobile between now and December 31, 1958.

The Q. C. H. Plan is devised to help you develop a profitable on-the-farm feed service QUICKLY. It can be used for free demonstrations, to introduce your brand of feed concentrates, to promote the sale of molasses, and in many other ways to attract new customers.

It is added to the Daffin training and merchandising program which has proved so successful with owners everywhere. Here is your best opportunity of the year . . . take advantage of it!

The new Daffin Feedmobile . . . (with Labor Removed!)

CALL, WRITE, WIRE TODAY!

Daffin MANUFACTURING COMPANY

3265 NORTH PRINCE STREET, LANCASTER, PENNSYLVANIA

CONSULTANTS TO THE FEED INDUSTRY

C. W. SIEVERT and ASSOCIATES

Room 1339

221 N. LaSalle St. Chicago 1, Ill.

MARCO Feeding Grade TALLOWS

Quality tallow from one of the largest animal fat processing plants in the Southwest. Guaranteed specifications in all grades of fats.

Call collect anytime for quotations — MA 6-2803

MARCO CHEMICAL COMPANY

P. O. BOX 8 • FORT WORTH 1, TEXAS

CONSOLIDATED

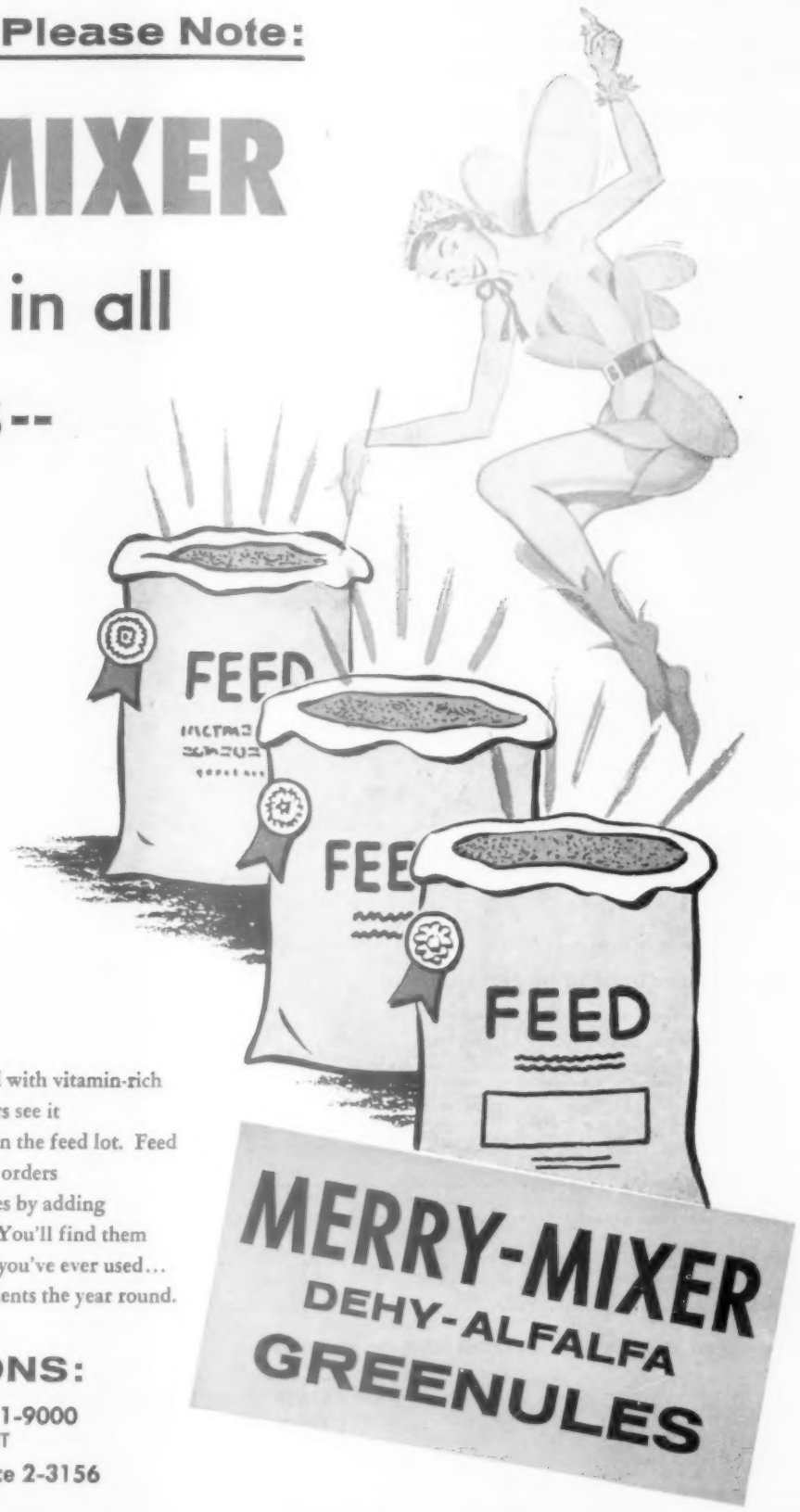
Feed Manufacturers Please Note:

MERRY MIXER

isn't included in all feed formulas--

--ONLY

those which are proving the most successful!



Something wonderful happens to feeds supplemented with vitamin-rich MERRY-MIXER dehydrated alfalfa greenules. Feeders see it in increased appetite and growth on the feed lot. Feed manufacturers, in turn, see it reflected in repeat orders and new business. You, too, can spur sales by adding MERRY-MIXER greenules to your feed formulas. You'll find them dust-free and easier to mix than any other supplement you've ever used... and in good supply to meet your largest requirements the year round.

3 PLANT LOCATIONS:

Fremont, Nebr. } Phone: Park 1-9000
Nebraska City, Nebr. } FREMONT
Guntersville, Alabama Phone: Justice 2-3156

BLENDERS INC.

Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 7127—Grain Dryer

Lennox Industries, Inc., has announced a new "Super 300" dryer which handles batches of 75 to 300 bu. per batch. It has all the features of the company's larger "Super 600." The dryer has LPG gas direct fired heat section with output of 500,000 Btuh to 4 million Btuh, large

air delivery, 33% free area perforated side walls, powered metering rolls for slow and even recirculation, bucket elevator with unloading rate up to 1,500 bu. per hour and partial batch drying without heat loss. It can be used with the Lennox CD3 indirect oil-fired crop dryer as the heat and air supply. Check No. 7127 on the coupon and mail it to Feedstuffs for more information.

No. 7128—Coated Abrasive

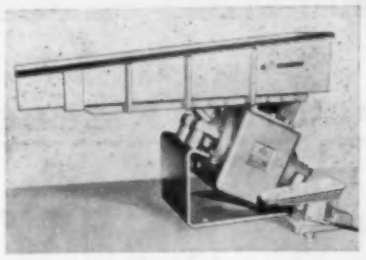
No Load finishing paper, a new product of Armour Coated Abrasives Division, Armour & Co., is now available. It is recommended for sanding undercoats, paints, varnishes, lacquers, enamels, shellac, sealers, primers and surfacers, plastic fibreglas, wood, metal, ceramics, glass, rubber and other materials. A special coating which is designed to prevent residue from clogging the abrasive side of the paper is used. The non-loading coating is designed not to rub off during sanding or when moisture is present. The paper is available in several weights and grits. Technical or price information may be secured by checking No. 7128 on the coupon and mailing it to Feedstuffs.

No. 7126—Valve Bag Packer

E. D. Coddington Mfg. Co. has released information on its Air-Pac packer which fills standard valve bags of from 20 lb. to 100-lb. capacity. A built-in scale provides close weight control and shuts off packer automatically when the desired weight is reached. A company statement said the machine uses the improved fluidizing air principle of conveying material into the bag. For more information, check No. 7126 on the coupon and mail it to Feedstuffs.

No. 7125—Vibratory Feeder

A new vibratory feeder with capacity rated at 10 tons per hour has been added to the Eriez Manufacturing Co. line of Hi-Vi feeders. The unit is designed to handle medium to heavy feeding to batch weighing scale, hoppers, processing mills, pulverizers, dryers, furnaces, belt conveyors, and the like. Seven standard trays are



available in regular 16-ga. mild steel or 16 ga. Type 304 stainless steel. The units incorporate the Eriez electro-permanent magnetic drive which requires no rectifier, and they can be wired into available AC power. Full details on the new unit can be had by checking No. 7125 on the coupon and mailing it to Feedstuffs.

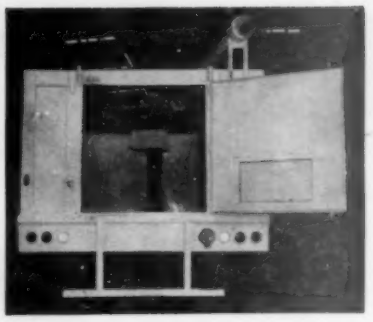
No. 7121—Grain Distributor

When grain drops into bins from an elevator, higher moisture kernels have a tendency to remain in or near the spout line with foreign material. Slick, dry kernels slide to the sides. Seedburo Equipment Co. has announced a new grain distributor, Scattergrain, for scattering and blending the high moisture grain and foreign

material in a more even distribution in the bins. The company announcement said Scattergrain assures proper blending and scattering throughout the bin making an aeration system work more efficiently. Complete information and price are available by checking No. 7121 on the coupon and mailing it to Feedstuffs.

No. 7172—Bag-Bulk Delivery Body

A new front unloading bag-and-bulk delivery body, Dorsey Model BB-F, is now in production at the bulk equipment division of Dorsey Trailers. New design features include multi-stage auger flighting for handling high-fat feeds and a torque limiter to stop the augers when impeded by foreign objects. Feed moves through a 6-in. screw conveyor, 9-in. vertical auger and 6-in. discharge auger. Outside post construction provides a smooth interior for bulk or bagged feed or other cargo. Front-unloading allows the operator to move forward to the unloading point and reduces space requirements inside the body. The BB-F comes in lengths 10 to 18 ft. Further information and specifications may be had by checking No. 7172 on the coupon and mailing it to Feedstuffs.



No. 7129—Pneumatic Conveyor Bulletin

A bulletin describing the Robinson Aire-Probe conveyor for handling fine, granular and dry pulverized materials pneumatically has been released by the Robinson Air-Activated Conveyor Systems division of Morse Boulger Destructor Co. The unit can be either portable or built in, and it can pick up its load from a pile on the floor or ground or can be hooked up permanently or temporarily to a loading chute. Bulletin No. 401, together with supplementary bulletins, will be supplied by checking No. 7129 on the coupon and mailing it to Feedstuffs.

No. 7130—Metal Laying Nest

A metal laying nest designed for light breed layers has been put on the market by Oakes Manufacturing Co., Inc. It features square hole sections having an entrance 7¾ in. wide and 8½ in. high. Construction is of galvanized steel, except for wood perches on strap iron which can be raised to prevent roosting. The nest trays are removable for cleaning, and each nest has dimension of 13½ in. high and 12¾ in deep. Known as No. 544, the nest has 14 holes and over-all dimensions of 27⅝ in. height in front and 33⅜ in. in the rear, 12¾ in. depth and length of 57⅞ in. Weight is 50 lb. For further information check No. 7130 on the coupon and mail to Feedstuffs.

No. 7170—Bulk Truck Body

A new model bulk delivery body has been announced by the bulk equipment division of Dorsey Trailers, Inc. The model F-M features multi-stage design of auger flighting to increase efficiency of handling feeds high in fat content, and a torque limiter that stops augers when foreign obstructions are encountered.

The all-steel body is available in lengths of 10 and 12 ft. It has a 4¾-in. screw conveyor, 7-in. vertical auger and a 6¾-in. discharge auger. More information may be obtained by checking No. 7170 on the coupon and mailing to this publication.

No. 7162—Pneumatic Handling

An eight-page bulletin reprinted from a technical report describes the three basic pneumatic handling systems for bulk materials. It is being made available by Fuller Co. The

Send me information on the items marked:

☐ No. 7121—Grain Distributor	☐ No. 7136—Egg Vendor
☐ No. 7125—Vibratory Feeder	☐ No. 7137—Bagging Scale Bulletin
☐ No. 7126—Valve Bag Packer	☐ No. 7157—Bag Drop Tester
☐ No. 7127—Grain Dryer	☐ No. 7158—Grain Fumigant Pump
☐ No. 7128—Coated Abrasive	☐ No. 7159—Pneumatic Bulk Truck
☐ No. 7129—Pneumatic Conveyor	☐ No. 7161—Bulk Feed Unit
☐ No. 7130—Metal Laying Nest	☐ No. 7162—Pneumatic Handling
☐ No. 7131—Flexible Loader	☐ No. 7164—Pneumatic Bulk Trailer
☐ No. 7134—Grain Sample Divider	☐ No. 7166—Grain Aeration System
☐ No. 7135—Plastic Bag	☐ No. 7170—Bulk Truck Body
(PLEASE PRINT OR TYPE)	☐ No. 7172—Bag-Bulk Delivery Body

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

——— CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL ———

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

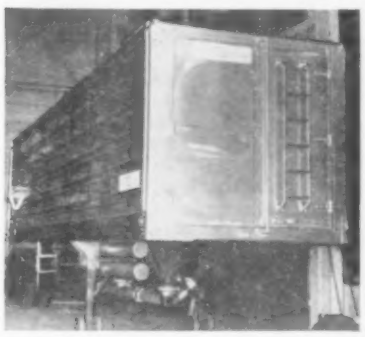
P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

bulletin includes block diagrams depicting the relationship of equipment components for straight vacuum, straight pressure and combination pull-push pneumatic handling systems. Text material offers case history examples on installation, capacities, efficiency and economy in representative industries. Five photographs show various pieces of equipment, including a two-way gate, a remote control panel, a receiving filter, an exhaust blower and a dust collector. Also included is a table of typical materials conveyed in pneumatic handling systems. Copies of the bulletin are available by checking No. 7162 of the coupon and mailing to this publication.

No. 7164—Pneumatic Bulk Trailer

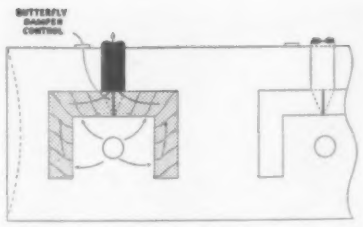
A new type of pneumatic trailer has been designed by the Albert Air Conveyor Corp. By using pressurized tanks, screw conveyors and rotary valves are eliminated. There are no moving parts in contact with the



product. Material is delivered in the "Dense-Flo" conveyor at low velocity through pipes directly into customers' storage bins. A built-in dust collector on the trailer eliminates dust, and uses a closed-air-return system. Check coupon No. 7164 and mail to Feedstuffs for further information.

No. 7166—Grain Aeration System

An aeration system that permits pressure and air flow equalization throughout a flat storage building has been made available by the Monroe Grain Aeration Co. In introducing the new system, the manufacturer points out that problems arise in flat storage because of grain "heaping" directly below fill openings. Its new "U-Duct" system is designed to provide concentration of air flow at high points in the heap, and reduction at low points, thus providing maximum aeration activity at points



where it is needed most, in addition to equalizing pressures. A partial or complete damper shut-off, controlled from outside the building, permits isolated aeration of specific trouble or danger spots within the storage facility. Details are available by checking No. 7166 on the coupon and mailing to this publication.

No. 7157—Bag Drop Tester

An automatic flat drop machine for testing filled multiwall bags has been developed by the St. Regis Pa-

tracking down more business?

WELL, HERE'S A TIP:

Investigate the exclusive profit-proved Ultra-Lifed Programs. Feed manufacturers from the Atlantic to the Pacific, from Canada to South America, are really building business with the outstanding, exclusive, Ultra-Lifed programs. Write today for full details—no obligation

Ultra-Life LABORATORIES, INC.

Main Office and Plant — EAST ST. LOUIS, ILLINOIS

One of the country's oldest and largest manufacturers of vitamin and trace mineral products.

COLUMBIA SOFT PHOSPHATE

IMMEDIATE DELIVERY
LOW COST
WRITE FOR INFORMATION

Columbia Phosphate Co.
1001 Washington St. Louis, Mo.

COLUMBIA PHOSPHATE CO. PHOSPHATE PRODUCTS

HI-SEAS

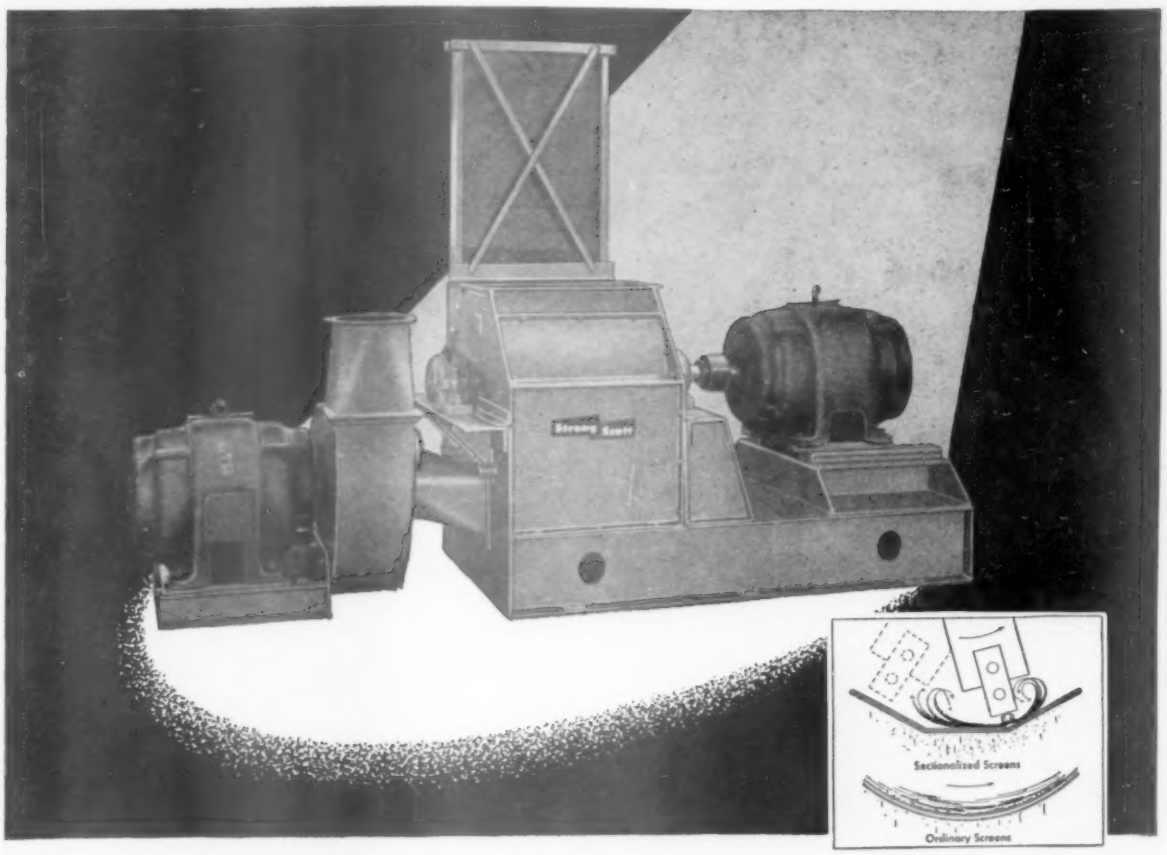
stabilized
MENHADEN FISH MEAL
and
MENHADEN WHOLE MEAL
(with fish solubles)

FIRST with . . .
GUARANTEED ANALYSIS
(of over-all Protein Digestibility and Amino Acids)

EXCLUSIVE ANTI-OXIDANT PROCESS
HIGHEST METABOLIZABLE ENERGY VALUES

write for full details to:
HAYNIE MENHADEN PRODUCTS INC.
WILDWOOD, N. J.

HI-SEAS



Strong-Scott presents a new idea in Hammermill operation

WITH VORTEX GRINDING, material cannot roll along the surface as on ordinary curved screens. Instead, the shallow valleys made by the joining of the screen sections bounce the material back into the grinding area. This produces an air attrition grinding of particle on particle, in addition to the impact grinding on the hammers, resulting in higher tonnages per hour.

Sectionalized screens offer higher capacities through "Vortex Grinding Action"

The exclusive sectionalized screens in the new Strong-Scott Hammermill assure increased grinding capacities through "vortex grinding action" (see photo upper right).

Specially hardened screens . . .

Because the screens are flat, they can be subjected to a special hardening process and are guaranteed to wear 10 times longer than ordinary curved screens. This drastically reduces your production costs. The special hardening means the perforations retain their sharper edges and original size longer. This produces a more uniform, quality controlled product at a greater capacity for the entire life of the screens.

For your convenience, Strong-Scott maintains a "Production Testing Service," complete with their full line of Grinding, Mixing and Separating equipment. Write to Strong-Scott for full details of this no-cost service.

REMOTE CONTROL SCREEN CHANGE—Only the new Strong-Scott Hammermill offers quick-changing up to seven screens from a remote location elsewhere on the floor above. Also, reversible rotation in this Hammermill adds to the long life of the screens.

Equipment Designed for Better Processing

The Strong Scott Mfg. Co.

451 Taft Street N.E.
Minneapolis 13, Minnesota

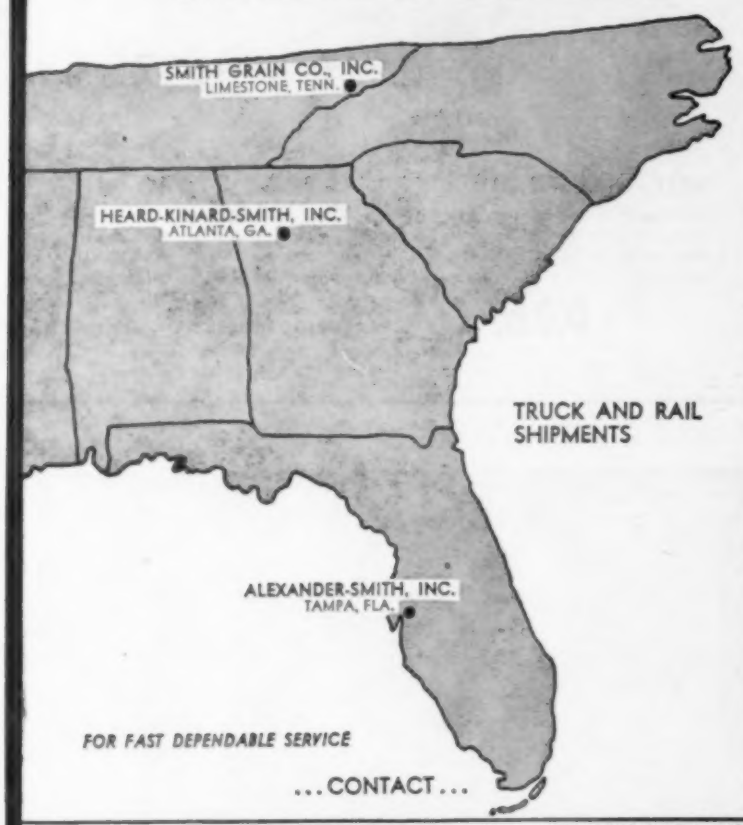
PLEASE SEND ME YOUR Dept. FS-823

☐ New Hammermill Bulletin
☐ Production Testing Information

Name .....
Address .....
City ..... State.....

● *Serving the* **FEED INDUSTRY** *in the* **SOUTHEAST**

GRAINS — GRAIN PRODUCTS — PROTEIN MEALS
CITRUS AND BEET PULPS — FEED INGREDIENTS



FOR FAST DEPENDABLE SERVICE

...CONTACT...

HEARD-KINARD-SMITH, INC.
3240 PEACHTREE ROAD
ATLANTA, GA.
PHONE CE. 3-5378

SMITH GRAIN CO., INC.
LIMESTONE, TENN.
PHONE
2660

ALEXANDER-SMITH, INC.
915 S. WATER ST.
TAMPA 2, FLA.
PHONE: 20827

LUKE HEARD • WILL KINARD • BILL SMITH • BOB ALEXANDER

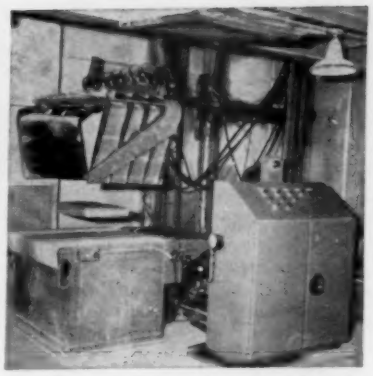
"SERVICE IS OUR CHIEF PRODUCT"

AUBREY FEED MILLS

RED **A** FEEDS

LOUISVILLE, KENTUCKY

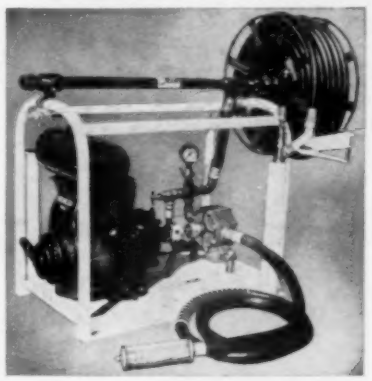
SERVING THE GREAT SOUTHEAST



per Co. Average rate of testing is two bag drops per minute, based on a series in which the height of each successive drop is increased in 6 in. increments from a minimum of 24 in. to a maximum of 10 ft. Once a bag has been placed on the machine, all handling is done mechanically until breakage is detected and the bag is taken off the machine by the operator. Only one operator is required. The tester is operated by setting the dials on a control panel to determine the height and pattern of drops in a test series. The number of drops made in a test series is indicated on the control panel. More information is available by checking No. 7157 on the coupon and mailing to Feedstuffs.

No. 7158—Grain Fumigant Pump

A pump-engine unit designed especially for the application of heavier-than-air grain fumigant materials



in flat or round storage buildings has been put on the market by Tryco Manufacturing Co., Inc. The high-volume, vane type pump of the new model F-100 delivers capacities up to 19 gal. per minute, and is equipped with special packing that will withstand the penetrating action of grain fumigants. For more details check coupon No. 7158 and mail to this publication.

No. 7159—Pneumatic Bulk Truck

A pneumatic bulk truck with a 9-in. screw conveyor with reinforced flights running the full length of the body has been added to the product line of Sprout, Waldron & Co., Inc. The equipment also features full opening drop doors that hinge from the sides of the hoppered body to

insure clean flow of materials to the conveyor. The standard three-compartment, 12-ft. model has a capacity of 504 cu. ft. Unloading capacities range from 15-20 tons an hour. Cost of the truck is about 20% less than the firm's standard Feed Piper. Details are available by checking coupon No. 7159 and mailing to Feedstuffs.

No. 7131—Flexible Loader

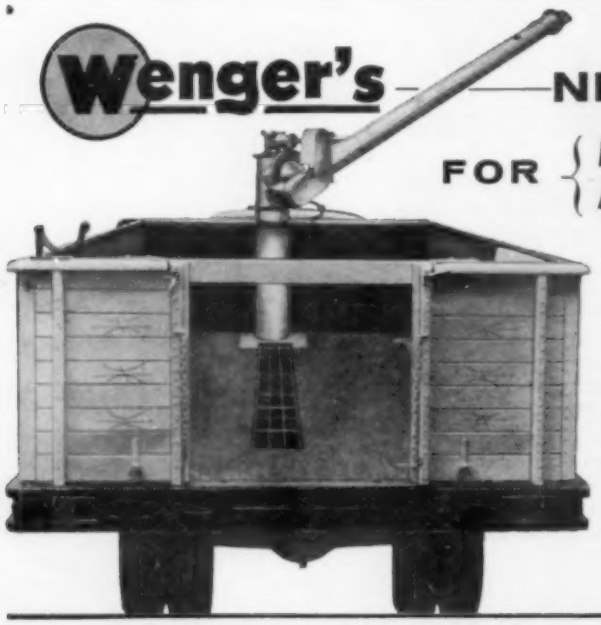
The Flex-Bend loader, manufactured by R. T. Sheehan Co. is described in a bulletin released by the company. Included in the loading unit are a power car, belt drive and stacker cars and as many center cars as required to make the desired length. Car dimensions are: power car, 36 in.; belt drive car, 36 in.; center car, 18 in., and stacker car, 96 in. It has four drive units, using three-phase, 220 or 440-volt power supply. Conveyor belts are 12 in. or 18 in. wide and they travel 36 in. above the floor at a speed of 120 ft. per minute. The 12-in. belt bends horizontally on a 5-ft. inside radius and the 18-in. belt on a 6-ft. inside radius. The stacker boom will swing 180° and has an adjustable delivery height of from 18 in. to 72 in. and a belt speed of 400 ft. per minute to facilitate stacking. The bulletin can be secured by checking No. 7131 on the coupon and mailing it to Feedstuffs.

No. 7161—Bulk Feed Unit

A new model "bulk mobile" with two "seal master" sliding gates in each compartment is being manufac-

Wenger's NEW **BULK UNLOADER**

FOR { *Flat Bed Trucks—Economical* / *Mill to Farm Deliveries.*



Handle both bagged and bulk feeds, (mash, pellets, crumbles, etc.) and whole grains in a single flat bed truck. Horizontal unloader recessed in floor of truck. Vertical boom is 7 feet high (extra height optional). 14 ft. unloading boom will rotate 360 degrees and may be elevated to 18 ft. above ground level with hydraulic hand pump furnished with unit. Entire unit is power driven from power take off. May be installed in your own shop.

Write for information giving dimensions and make of your truck bodies.

Wenger Mixer Mfg. Co.
SABETHA, KANSAS • PHONE 111

Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

AA Arbor Acres
Make sure
Your broilers come from
ARBOR ACRES females!

tured by Seco, Inc. One feature of the equipment is that feed can be shut off at any time, thus eliminating overload and breakage caused by starting the auger filled with feed. The auger is designed for slow speed, high capacity to reduce pellet breakage to a minimum. It has all-welded construction, and self-cleaning sides. Check No. 7161 on the coupon and mail to Feedstuffs for further information.

No. 7134—Grain Sample Divider

Improvements in its Boerner Sampler have been announced by Burrows Equipment Co. The new grain sample divider is built to conform with U.S. Department of Agriculture specifications. The metal pockets are built to 1/1,000 in. and are made in one piece to eliminate soldering and provide a more thorough mixing of material. For more information check No. 7134 on the coupon and mail it to Feedstuffs.

No. 7135—Plastic Bag

A bag made of polyethylene plastic has been developed by Spencer Chemical Co. for shipment of fertilizer and use as well as for feed and other farm needs. Made of 10-mil thickness plastic, the bag provides weather protection for the contents and has a wide range of reuse on the farm. The bags can be cut open and sealed together into waterproof, weatherproof tarpaulins, silo covers, machinery covers, storm windows, ditch liners and other uses. For further information check No. 7135 on the coupon and mail to Feedstuffs.

No. 7136—Egg Vendor

An egg vendor which will vend two sizes of eggs at two prices is available from Tobias Enterprises. Known as the "T-Line" egg vendor, it has fully automatic refrigeration and humidity control and a capacity of 112 doz. eggs in vending position and refrigerated storage space for another 120 doz. Prices of eggs are easily changed. The unit is available on a time payment plan. For literature on the unit or the time payment plan, check No. 7136 on the coupon and mail it to Feedstuffs.

No. 7137—Bagging Scale Bulletin

A portable bagging scale designed for either power or gravity feed is described and illustrated in a product data sheet released by Richardson Scale Co. The data sheet, referred to as No. 5803, details the E-50 scale and its weighing of free running materials as well as dusty or non-free flowing products. Specifications and a line drawing showing dimensions are also included. Secure the information by checking No. 7137 on the coupon and mailing it to Feedstuffs.

Economist Predicts Bright Future for "Family-Size" Farm

COLUMBUS, OHIO—A reassuring note to persons worried about the future of the "family-size" farm has been voiced by Dr. Robert C. Kramer, agricultural economist at Michigan State University.

Speaking at the annual conference of the American Country Life Assn. at Ohio State University, Dr. Kramer said, "Owner-operated, family-size farms are fully capable of continuing to produce an important part of our agricultural output economically and in competition with large-scale enterprises, whether integrated or not. They must keep alert and adapt to constant changes."

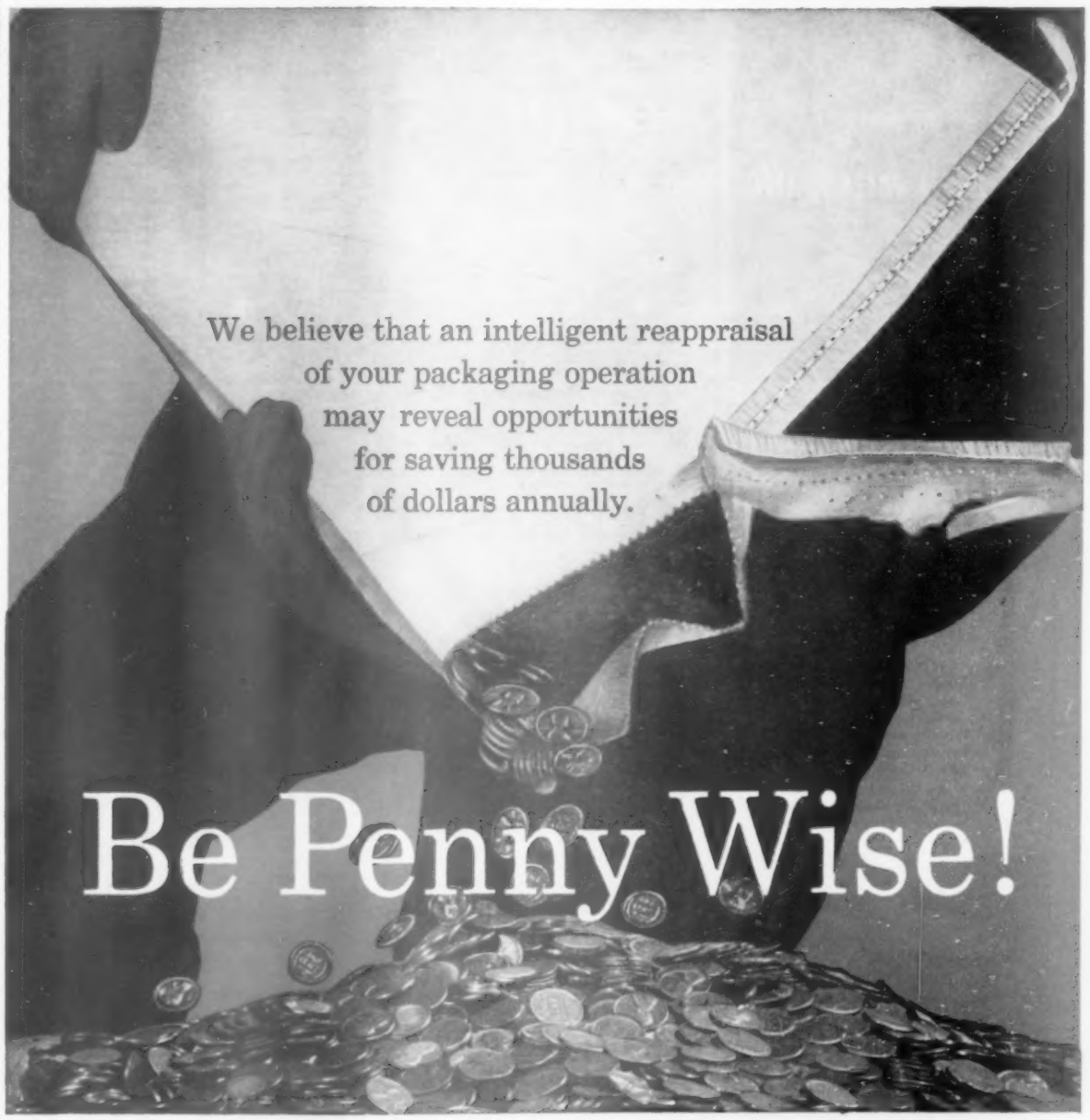
In his address to conference delegates, Dr. Kramer dealt at length with the subject of vertical integration, sometimes referred to as contract farming.

"My research leads me to believe," he said, "that as of this date only a small percentage of the red meat produced in the U.S. comes from integrated programs. However, I believe we are now on the threshold of a tidal wave of contract production.

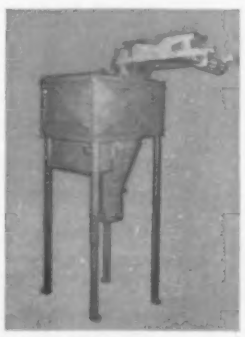
"Farmers have shown that they will surrender a little of their freedom for a little more security. They have shown they will integrate with non-farm firms. Even though integration may account for a small percentage of the total output of a commodity, the integrated part may set the pace for the rest of the industry."

NEW MANAGER NAMED

PAXTON, ILL.—Earlon J. Cole has begun his new duties as manager of the Paxton Farmers Grain Co. He succeeds Wesley Arends.



IN BUYING MULTIWALL BAGS
NO SAVING IS TOO SMALL TO IGNORE!



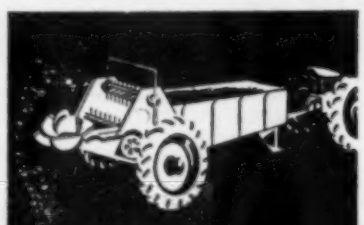
THE KRAFTPACKER Open Mouth Bag Filling Machine, for free-flowing material, automatically saves pennies, too, through higher production and greater accuracy. Requires a lower investment and maintenance cost than any other automatic machine of its type in use today!

KRAFT BAG CORPORATION
Gilman Paper Company Subsidiary
639 Fifth Avenue, New York 20, N. Y.
Daily News Bldg., Chicago 6, Ill.
Integrated mills at St. Marys, Georgia and Gilman, Vermont
Exclusive Sales Agents for Kraftpacker

Show me how to save on my multiwall bag packaging.
Gilman PAPER CO.
COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....
PRODUCT MFD.....
NAME.....

Use Your Own Salt and Calcium with Herman Nagel's Formula B PHOSPHORUS CONCENTRATE WITH TRACE MINERALS
...to Supply *Every Needed Mineral*
in a form so soluble "it melts on your tongue."
The HERMAN NAGEL Co.
53 W. Jackson Blvd.
Chicago 4, Illinois

Feed Mixers Products
COLBY
PULVERIZED
Oats or Barley
ROLLED OATS
AND
FEEDING OATMEAL
COLBY MILLING, INC.
COLBY, WISCONSIN
PHONE LD-360-266 TWX Colby 8866



It's DANNEN for FERTILIZER and

- Feed Ingredients
- Soybean Oil Meal
- Tankage, Meat Scraps
- Cottonseed Meal
- Grain Fumigants

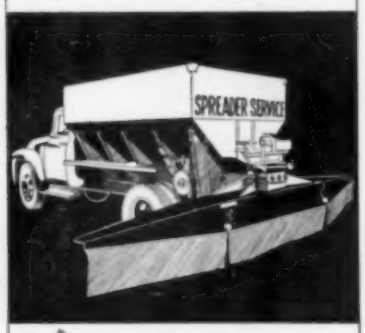
DANNEN MILLS, INC.
Grain and Jobbing Division
St. Joseph, Mo. Phone [illegible]

DANNEN

SIMONSEN
Fertilizer Spreader

Year after year, Simonsen engineers are constantly making every effort to design a better spreader. As a result, old methods have become obsolete compared to the new modern advancements of the Simonsen Fertilizer Spreader.

It is the most accurately spreading piece of equipment in America today.



Check these Up-to-date features that place SIMONSEN way out in front . . . . .

- Hydraulic fan drive.
- Stainless steel apron and parts.
- Compartment hinges on the outside.
- Boom shock absorbers.
- Grooveless bearings.
- Better weight distribution.

Keep ahead with Simonsen . . . write for more details about the Spreader that's WAY AHEAD.

SIMONSEN MANUFACTURING COMPANY
DEPT. FS QUINCY, IOWA

FEEDSTUFFS
A WEEKLY NEWSPAPER
For the Feed Manufacturer, Feed Jobber
Feed Broker and Feed Dealer

Index for July, 1958

Volume 30 Numbers 27-30

*First number denotes issue date; "p" and second number denotes page number.

ADDITIVES:
Canadian Meeting Spotlights Feed Advances ..... 5—p. 1
Colorado Seeks New Uses for Additives ..... 5—p. 58
Feed Additives Studied For Growth Rate Effect ..... 12—p. 100
Washington Researcher Reports on Additives for Fattening Lambs ..... 26—p. 30

ADVERTISING:
Postal Guide For Direct Mail Advertising ..... 26—p. 32

ALFALFA:
Heavy Disappearance, Curtailed Production Increase Dehy Prices ..... 26—p. 1

AMINO ACIDS:
DuPont Offers New Methionine Product ..... 12—p. 4
Research Reported on Cottonseed Meal Lysine ..... 19—p. 62

ANTIBIOTICS:
Colorado Seeks New Uses For Additives ..... 5—p. 58
Kansas Nutritionist Discusses Poultry Studies ..... 12—p. 92
Purdue Reports Hygromycin and Antibiotic Study ..... 12—p. 76
Researchers Report Feeding Studies at Western Meeting . 19—p. 6
E. P. Singsen Discusses Antibiotics in Chicken Nutrition .. 5—p. 53
Studies Antibiotics For Shipping Fever ..... 26—p. 60

ANTIOXIDANTS:
Canadian Meeting Spotlights Feed Advances ..... 5—p. 1

ARSENICALS:
Arsenical in the Ration of Dairy Calves ..... 26—p. 52

ASSOCIATIONS:
American Association of Feed Microscopists (Officers) .. 12—p. 7
American Dairy Science Assn. (53rd Meeting) ..... 19—p. 14
American Farm Bureau Federation (Plans European Trade Center) ..... 19—p. 87
American Feed Manufacturers Assn. (Awards for Editors) 12—p. 71
American Feed Manufacturers Assn. (44 Million View Feed Film) ..... 19—p. 8
American Poultry & Hatchery Federation (Poultry Congress) 26—p. 1
American Poultry & Hatchery Federation (Egg Commodity Group) ..... 26—p. 1
California Poultry Hatchery Federation (Officers) ..... 12—p. 78
Canadian Feed Manufacturers Assn. (Meeting) ..... 5—p. 1
Cincinnati Feed Club (Officers) ..... 19—p. 8
Delmarva Poultry Industries (Resolution) ..... 12—p. 93
Georgia Feed Assn. (Convention) ..... 5—p. 1, 12—p. 6
Grain Elevator & Processing Superintendents (Chicago Chapter) ..... 12—p. 88
Independent Grain Warehousemans Assn. (New Group Formed) ..... 12—p. 94
Midwest Feed Manufacturers Assn. (Food-A-Rama Plans) 12—p. 22
Midwest Feed Manufacturers Assn. (Production School Planned) ..... 5—p. 4, 26—p. 7
Midwest Feed Manufacturers Assn. (Nutrition Conference for Vets) ..... 5—p. 7
National Broiler Council (Views on Delmarva Resolution) . 12—p. 93
National Science Foundation (Dr. Ernest Volwiler Named) 19—p. 89
Nebraska Dehydrators Assn. (Spring Party) ..... 5—p. 26
Nebraska Grain Improvement Assn. (Names Secretary) ... 12—p. 10
Oklahoma Feed Manufacturers Assn. (Officers) ..... 19—p. 6
Oregon Broiler Growers (Officers) ..... 12—p. 97
Poultry & Egg National Board (Egg Promotion Plans) .... 19—p. 99
Poultry & Egg National Board (Egg Leaflet) ..... 19—p. 62
St. Joseph Feed Club (Officers) ..... 5—p. 72
Virginia Poultry Federation (Permanent Director) ..... 26—p. 35

AUTHORS:
Adams, J. R.
The Feed Industry's Future ..... 5—p. 18
Aspinwall, Leo V.
Are Your Merchandising Lines Paying Their Rent? ..... 19—p. 75
Bedford, Jack
Postal Guide for Direct Mail Advertising ..... 26—p. 32
Bergland, Roger
Kansas Plant Doubles Rate of Output and Reduces Crew 12—p. 28
Blair, Jess F.
Adapting Mill Services to Area Increases Profits ..... 5—p. 29
Caskey, C. D.
Studies on High Efficiency Broiler Rations ..... 12—p. 16
Cayce, Eldred A.
The Role of the Buyer in Today's Feed Business ..... 19—p. 10
Cravens, Dr. W. W.
Progress in Feeding Broilers in the U.S. ..... 19—p. 40
Combs, G. F. (see Caskey, C. D.)
Doty, Harry O., Jr.
Use of Fats and Oils in Formula Feeds ..... 19—p. 28
Hastings, Dr. W. H.
Grain Sorghums Palatability for Poultry ..... 19—p. 58
Helbacka, N. V. (see Caskey, C. D.)
Huckabee, J. C.
Changes in the Feed Business and Their Effects on Production and Handling Facilities ..... 26—p. 18
Jensen, Dr. J. L.
The Feed Industry Looks at Regulations ..... 19—p. 34
Kantner, Arthur H.
Credit Policy Guides for the Feed Industry ..... 19—p. 48
Kohls, Dr. R. L.
Future of the Midwestern Egg Industry ..... 12—p. 64
Kreshon, Albert S.
Dealer Finds New Revenue in Growing Urban Market .. 26—p. 10
Krider, Dr. J. L. (see Cravens, Dr. W. W.)
Kriesel, Herbert C.
Dairy Industry Shows Striking Changes in Production and Marketing of Products ..... 12—p. 14
McCay, Dr. C. M.
Formulation and Manufacture of Dog Food ..... 19—p. 94
McLeod, Robert F.
Changes in the Feed Business and Their Effects on Production and Handling Facilities ..... 26—p. 18
Nelson, Al P.
Emphasis on Efficiency Boosts Profits for Custom Mill .. 19—p. 18
Boost Volume By Buying Second Feed Store ..... 19—p. 64
Well Displayed Variety of Merchandise Builds Sales .... 12—p. 24
Quillin, E. C. (see Caskey, C. D.)
Ross, James
Remodeling Boosts Mill Capacity ..... 5—p. 68
Sanford, Dr. Paul E. (see Hastings, Dr. W. H.)
Stokes, W. N., Jr.
Feeder Financing in Today's Changing Agriculture .... 12—p. 32
Wilson, John G.
Washington Feed Man Uses Novel Approach to Boost His "Rooster Booster" Feeds ..... 12—p. 16

BARLEY:
Sharp Increases in Swine Production Indicated in Northwest Barley Area ..... 12—p. 89

BOARDS OF TRADE:
Chicago Board of Trade (Change in Trade Hours Opposed) 19—p. 7
San Francisco Grain Exchange (Committee Members) ... 19—p. 4

BROILER FEEDING:
Progress in Feeding Broilers in the U.S. ..... 19—p. 40
Studies on High Efficiency Broiler Rations ..... 12—p. 16

CANADA:
Canada Drouth Area Gets Federal Aid ..... 26—p. 79
Drouth Causes Acute Shortage of Roughage ..... 12—p. 4
Drouth Poses Threat to Reserves of Feed ..... 5—p. 6
Opinions Vary in Boxcar Inquiry ..... 19—p. 72

CATTLE FEEDING:
Livestock Research Reported at Oklahoma State University 12—p. 52

CHEMOBIOTICS:
Reports on Additives for Fattening Lambs ..... 26—p. 30

COMPANIES:
Abbott Laboratories, Inc. (New Research Center) ..... 5—p. 56
Abbott Laboratories, Inc. (Dr. Ernest H. Volwiler Named to Post) ..... 19—p. 89
Albers Milling Co. (To Distribute Foragizer) ..... 19—p. 8
Allied Mills, Inc. (Record Tonnage Year) ..... 12—p. 6
American Cyanamid Co. (Sales Manager) ..... 12—p. 7
Armour & Co. (Renames Laboratories Division) ..... 19—p. 7
Berkshire Livestock Test Farm (On-Farm Test Service) ... 26—p. 42
Big Ben Milling Corp. (Merger) ..... 12—p. 108
Buckeye Cellulose Corp. (Research Farm) ..... 26—p. 6
Butler Chemical Co. (Phosphate Price Increase) ..... 26—p. 8
C-G-F Grain Co. (General Manager) ..... 12—p. 8
Cliff D. Carpenter Associates (Consulting Firm) ..... 5—p. 4
Centennial Mills, Inc. (Elevator Sold) ..... 19—p. 90
Central Soya Co., Inc. (Buys Grain Terminal) ..... 12—p. 4
Dannen Mills, Inc. (Buys Kansas Elevator) ..... 12—p. 108
Dawe's Laboratories (New Officers) ..... 5—p. 4
Dixie Milling Co. (Hog Feeding Program) ..... 5—p. 26
Dodgen Industries (Sells Interests in North American Co.) 12—p. 108
Douglas Fresh Egg Co. (Plant Leased to Armour) ..... 5—p. 1
E. I. DuPont (Methionine Product) ..... 12—p. 4
Edwall Grain Growers (Washington Elevator Sold) ..... 19—p. 90
Ray Ewing Co. (Dr. Herbert S. Wilgus Joins Ewing Co.) 5—p. 8
Farm Bureau Milling Co. (Labor Contract) ..... 5—p. 1
Fisher Flouring Mills Co. (Warehouse Damaged) ..... 26—p. 4
Garland Mills, Inc. (Burns) ..... 19—p. 8
General Mills, Inc. (Changes Soybean Meal Sales) ..... 26—p. 75
Glencoe Mills, Inc. (Adds Warehouse Space) ..... 26—p. 73
Gooch Feed Mills (Sponsors Auction for Youngsters) ..... 12—p. 6
Hales & Hunter Co. (Strike Closes Mill) ..... 5—p. 1, 12—p. 4
Hawthorne Co. (Grain Storage Bins) ..... 12—p. 10
Heisdorf & Nelson Farms, Inc. (Washington Firm Buys Hatchery) ..... 12—p. 73
Hercules Powder Co. (Income) ..... 19—p. 8
Heterochemical Corp. (Hetrogen K Price Reduced) ..... 26—p. 8
Hill Fairchild Co. (Sold to Honeggers') ..... 5—p. 4
Hivalley Mills, Inc. (New Mill) ..... 5—p. 56
Honeggers' & Co., Inc. (Buys Hill Fairchild Co.) ..... 5—p. 4
Honeymead Products Co. (Soybean Drying Unit) ..... 12—p. 72
Iowa Farm Supply Co. (Considers Entering Feed Business) 19—p. 1
Jensen-Salsbery Laboratories (New President) ..... 5—p. 56
Lindsey-Robinson & Co. (Sales, Service Meeting) ..... 12—p. 50
Lipscomb Grain & Seed Co. (Forms Firm in Trinidad) .... 19—p. 6
Maritime Milling Co., Inc. (Promotes Summer Sales) .... 19—p. 104
Mayhew Elevator (Sold to Cooperative) ..... 5—p. 73
Mel Miller & Co., Inc. (New Firm Provides Integration Service) ..... 26—p. 8
Monsanto Chemical Co. (MHA Price Reduction) ..... 19—p. 4
National Alfalfa Dehydrating & Milling Co. (Anti-Trust Suit Filed) ..... 5—p. 4
Naturich Mills Co. (Doubles Rate of Output, Reduces Crew) 12—p. 28
Nopco Chemical Co. (Sales Manager for Pacific Div.) .. 26—p. 16
Nopco Chemical Co. (General Offices Moved) ..... 12—p. 8
Norris Grain Co. (Central Soya Buys Grain Terminal) ... 12—p. 4
North American Manufacturing Co. (Dodgen Interest Sold) 12—p. 108
Nutrena Mills, Inc. (Sets All-Time Records in June) ..... 26—p. 1
Odessa Union Warehouse Cooperative (Merger) ..... 12—p. 108
Olympia Feed Co. (Feed Firm Purchased) ..... 12—p. 4
Park & Pollard Co. (Promotes Summer Sales) ..... 19—p. 104
Paymaster Feed Mills (New Automatic Mill in Dallas) ... 5—p. 34
Chas. Pfizer & Co., Inc. (Buys Chemical Plant) ..... 26—p. 75
Pillsbury Mills, Inc. (Highest Net Sales, Earnings) ..... 26—p. 8
Pillsbury Mills, Inc. (Feed General Sales Manager) ..... 26—p. 4
Portage County Farm Bureau Cooperative Assn. (Buys Feed Firm) ..... 5—p. 72
Productive Acres Manufacturing Co., Inc. (New Building) 26—p. 68
Progress Products Co., Inc. (Fire) ..... 5—p. 8
Ralston Purina (Sales Volume Sets Record) ..... 26—p. 1
Ralston Purina (New Mill at Memphis) ..... 12—p. 7
Reading Feed Mill (Fire) ..... 5—p. 26
Red Comb-Pioneer Mills, Inc. (Dealers Install Bulk) ..... 12—p. 90
Sales & Bourke, Inc. (Washington Firm Buys Hatchery) ... 12—p. 73
Dr. Salsbury's Laboratories (New Marketing Division) ... 19—p. 8
A. E. Staley Manufacturing Co. (Labor Contract) ..... 5—p. 1
A. E. Staley Manufacturing Co. (Improvements at South Chicago Plant) ..... 5—p. 73
Staley Milling Co. (Advises Dealers on New Trademark) . 5—p. 4
Staley Milling Co. (Trademark—illus.) ..... 12—p. 8
Staley Milling Co. (Names New Vice President) ..... 26—p. 6
F. M. Stamper Co. (Adds Product Development Section) . 5—p. 46
Martin L. Steger Supply Co. (Named Distributor) ..... 12—p. 100
Thunderbird Lumber Co. (Enters Grain Business) ..... 12—p. 7
Tillamook County Creamery Assn. (Plans Feed Mill) ..... 12—p. 107
Truck Grain Blower Co. (Names Distributor) ..... 12—p. 100
Union Warehouse Co-op (Merger with Washington Milling Firm) ..... 12—p. 108
Waggoner-Gates Milling Co. (Sold to Selders Brothers) .. 12—p. 93
E. D. Wilkinson Grain Co. (Grain Office Closed) ..... 5—p. 71
Wilson & Co. (Poultry Processing Plant) ..... 12—p. 88
R. L. Zeigler, Inc. (Meat Packing Firm Expands ..... 19—p. 11

COMPUTERS:
Electronic Calculation of Formulas Offered by California Scientists ..... 26—p. 7

CONFERENCES:
American Dairy Science Assn. ..... 19—p. 6
American Society of Animal Production (Western Division) 19—p. 6
Arizona Ruminant Nutrition Conference ..... 5—p. 22
Elevator Career Day ..... 19—p. 4
National Conference on Weights and Measures ..... 5—p. 1
Pennsylvania Poultry Federation ..... 5—p. 14
Poultry Breeders Conference ..... 19—p. 98
Purdue University Poultry Servicemen's Clinic ..... 19—p. 44

CONSTRUCTION:
Lackey, C. J. (Forest Mississippi) ..... 19—p. 4
Ralston Purina (Memphis, Tennessee) ..... 12—p. 7
Tillamook County Creamery Assn. (Tillamook, Oregon) ... 12—p. 107
University of Wisconsin (Madison, Wisconsin) ..... 26—p. 68
Western Canadian Seed Processors, Ltd. (Alberta, Canada) 5—p. 46
Wilson & Co. (Chicago, Illinois) ..... 12—p. 88

CONSUMPTION AND PRODUCTION:
Alabama Feed Volume Shows 27% Increase ..... 12—p. 45
Arkansas Reports Feed Sales Increase ..... 12—p. 75
Feedstuff Consumption Up 3% During October-May Period 5—p. 6
North Carolina Reports Feed Tonnage Record ..... 26—p. 72

CORN:
Corn in Hybrids Now Totals 93.8% ..... 19—p. 98

COTTONSEED MEAL:
Data on Cottonseed Meal Fed Broilers To Be Evaluated .. 12—p. 7
Research Reported on Cottonseed Meal Lysine ..... 19—p. 62
Use of Cottonseed Meal in Swine Rations ..... 12—p. 101

CREDIT AND FINANCING:
Credit Policy Guides for the Feed Industry ..... 19—p. 48
Feeder Financing in Today's Changing Agriculture ..... 12—p. 32

CROPS:
USDA "Stunned" By Its Own Feed Grain Crop Estimates 12—p. 1

CUSTOM MILLING:
Emphasis on Efficiency Boosts Profits for Illinois Custom Mill ..... 19—p. 18

DAIRY FEEDING:
See Record Dairy Feed Use ..... 26—p. 73

DAIRY INDUSTRY:
Dairy Industry Shows Striking Changes In Production and Marketing of Products ... 12—p. 14
Farm Economist Looks at Future Of Dairy Farm ... 26—p. 24

DISASTERS:
Fisher Flouring Mills Co. (Portland, Oregon) ... 26—p. 4
Garland Mills, Inc., Greensburg, Indiana) ... 19—p. 8
Reading Feed Mill (Reading, Ohio) ... 5—p. 26
Progress Products Co., Inc. (Overton, Nebraska) ... 5—p. 8

DISEASES:
APHF Focuses Attention on New Developments in U.S. Poultry and Feed Industries ... 26—p. 1
Livestock Allergy Said Caused Partly by Feeds ... 26—p. 60
Louisiana Reports Anthrax Outbreak ... 12—p. 6
Nutritional Factors in Calf Diarrhea ... 12—p. 74
Oregon Study of Disease Considered ... 26—p. 16
Oregon Tests Feed Mix for Control of Coccidiosis ... 12—p. 50

DOG FOODS:
Formulation and Manufacture of Dog Feeds ... 19—p. 94

DRIED SKIM MILK:
Production of Dried Milk for Feed Drops ... 26—p. 72

EGGS:
New Egg Promotion Plan Described by PENB's Lloyd Gail 19—p. 99
Nutritional Value of Eggs Told in PENB Leaflet ... 19—p. 62

ENERGY:
USDA Dairymen Test Cows on Pasture For Use of Energy 5—p. 46

ENZYMES:
Enzyme Supplementation ... 12—p. 75

EXCHANGES (see BOARDS OF TRADE)

FARM INCOME:
Farm Receipts Show Increase ... 26—p. 48

FATS:
Arizona Ruminant Meeting ... 5—p. 22
Use of Fats and Oils in Formula Feeds ... 19—p. 28

FEED INDUSTRY:
APHF Focuses Attention on New Developments in U.S. Poultry and Feed Industries ... 26—p. 1
Changes in the Feed Business and Their Effects on Production and Handling Facilities ... 26—p 18
The Feed Industry's Future ... 5—p. 18

FEED SUPPLIES:
Capital Comment ... 26—p. 80
Record-Equalling Total Crop Seen As of July 1; Feed Grain Strong ... 12—p. 1

FILMS:
Feed Films Viewed By More Than 44 Million—AFMA ... 19—p. 8

FISH BY-PRODUCTS:
April Fish Meal Output Down 15% ... 19—p. 86
Canadian Meeting Spotlights Continuing Feed Advances .. 5—p. 1
Fish Meal Imports, Production ... 12—p. 45

FLAVORS:
Studies on the Use of Certain Flavors in the Diet of Chicks 26—p. 53

FREIGHT:
Lower Truck Rates on Westbound Meat ... 26—p. 75

GIN TRASH:
Cattle Fed Gin Trash, Alfalfa in Texas Tests ... 19—p. 61

GRAIN SORGHUMS:
Grain Sorghum Palatability for Poultry ... 19—p. 58

GRAIN TRADE:
Futures Trading In Feed Grains Shows Decline ... 26—p. 46
More Grain Storage Space Needed In Iowa ... 12—p. 24
More Grains Now In Export Plan ... 5—p. 1
Threat to Position of Buffalo Made By Toledo Plans ... 12—p. 6

GYPSUM:
Gypsum Used as Feed Regulator ... 5—p. 44

HUNDREDWEIGHT:
National Weights Group Renews Bu. vs. Cwt. Issue ... 5—p. 1

HYGROMYCIN:
Purdue Reports Hygromycin and Antibiotic Study ... 12—p. 76

INSECTICIDES:
Beef Trial Shows Value of Treating with Grub Systemics 19—p. 27

INTEGRATION AND CONTRACT FARMING:
"Cooperative" Integration Discussed at Poultry Meeting . 29—p. 1
Integrated Layers Estimated at 20% ... 12—p. 4
Integration Discussed By G.L.F. Manager ... 12—p. 101
Integration Will Come to Animal Agriculture, Speaker Tells Group ... 19—p. 4
New Firm To Provide Integration Service for Feed Manufacture ... 26—p. 8

LABOR RELATIONS:
Elevator Strike Ends at K.C. ... 12—p. 6
Halas & Hunter Mill Remains Shut Down ... 12—p. 4
Strike Closes One Chicago Area Mill, Two Firms Settle .. 5—p. 1
Terminal Grain Elevator Strike Started at K.C. ... 5—p. 8

LACTIC ACID:
Ohio Researchers Test Lactic Acid Effect on Steers ... 12—p. 11

LEGISLATION:
Cooley About-Face Termed Clue to Farm Bill Passage ... 26—p. 8
Passage of Senate Farm Bill Expected Without Changes .. 12—p. 1
.."Self-Help" Turkey Legislation Given Only Small Chance 12—p. 1
Special Milk Program Extended by New Law ... 12—p. 7

LIMESTONE:
Effect of Pulverized Limestone and Dicalcium Phosphate on the Nutritive Value of Dairy Feed ... 19—p. 84

LITERATURE:
ADA Publishes Nutrition Abstracts ... 12—p. 4
Feeding Leaflet Issued ... 26—p. 35
Nutritional Value of Eggs Told in PENB Leaflet ... 19—p. 62
West Virginia Leaflet Lists Credit Sources ... 19—p. 87

LIVESTOCK INDUSTRY:
A Large Slice (Editorial) ... 19—p. 2

LIVESTOCK NUMBERS:
Benson Cautions on Hog Overexpansion ... 19—p. 1
How Many Pigs This Fall? ... 12—p. 89
Number of Cattle on Feed up 16% From Year Ago ... 26—p. 6
Sharp Increase in Swine Production Indicated in Northwest Barley Area ... 12—p. 89
USDA Reviews Meat Animal Production, Price Outlook .... 19—p. 1

MANAGEMENT—LIVESTOCK AND POULTRY:
APHF Focuses Attention on New Developments in U.S. Poultry and Feed Industries ... 26—p. 1
Buying Started Pullets ... 12—p. 38
Gilts Produce Leaner Carcass, Tests Show ... 12—p. 72
Management Problems Discussed at Pennsylvania Conference ... 5—p. 14
Michigan Survey Shows Profts Greater With Larger Laying Flocks ... 12—p. 108
Mortality-Free Flocks Averaging 300 Eggs Predicted for Future ... 19—p. 98
Slat Broiler House Tested in Mississippi ... 19—p. 4
Suggests Keeping Hens in Laying Flocks 22 Months ... 12—p. 10
Survey Cites Need to Adapt Buildings to Today's Farming 5—p. 62
Temperature-Gain Relationship Shown in Iowa Hog Test ... 12—p. 68

MATERIALS HANDLING:
Five Dealers Install New Bulk Facilities ... 12—p. 90
Production School to Focus Attention on Bulk Handling Methods, Costs, Problems ... 26—p. 7

MEDICATED FEEDS:
Industry Group, FDA Meet on Plan for Fees on Medicated Feeds Applications ... 26—p. 4

MERCHANDISING:
Adapting Mill Services to Area Increases Profits ... 5—p. 29
Are Your Merchandising Lines Paying Their Rent? ... 19—p. 75
Dealer Finds New Revenue in Growing Urban Market ... 26—p. 10
Emphasis on Efficiency Boosts Profits For Custom Mill ... 19—p. 18
Boost Volume By Buying Second Feed Store ... 19—p. 64
Uses Novel Approach to Boost "Rooster Booster" Feeds 12—p. 16
Well Displayed Variety of Merchandise Builds Sales ... 12—p. 24

MILLFEED:
Report on Millfeed Price Situation Issued By Miller's Group 12—p. 96

MINERALS:
Fish Said To Need Trace Minerals ... 12—p. 80

MOLASSES:
Molasses Fed to Dairy Calves in Vermont Test ... 19—p. 66

NETHERLANDS:
Use of Protein from Potato Starch Effluent Studied in Netherlands ... 12—p. 97

NITROFURANS:
Nitrofuran Compounds Reported Effective in Rhode Island Tests ... 19—p. 96

PELLETING:
Alfalfa Pellets Mixed With Ground Ear Corn Fed Cattle in Tests ... 12—p. 54
New Mill To Produce Complete Pellet Feed ... 5—p. 56
Arizona Ruminant Meeting ... 5—p. 22
Pelleted Alfalfa, Cull Peas Fed for Protein ... 26—p. 67
Pelleting on Farms (editorial) ... 5—p. 2
Researchers Report Feeding Studies at Western Meeting . 19—p. 6
Research Reported at Oklahoma State University ... 12—p. 52
Tests Show Cattle Need Less Feed on Complete Pellet Ration ... 12—p. 40

PHOSPHORUS:
Effect of Pulverized Limestone and Dicalcium Phosphate on the Nutritive Value of Dairy Feed ... 19—p. 84
Research Reported at Oklahoma State University ... 12—p. 52

PIPERAZINE:
Report Piperazine Phosphate Hikes Gains in Swine ... 26—p. 14

POTATO STARCH EFFLUENT:
Use of Protein from Potato Starch Effluent Studied in Netherlands ... 12—p. 97

POULTRY FEEDING:
Kansas Nutritionist Discusses Recent Poultry Studies ... 12—p. 92
Pullet Feeding Studies at Clemson ... 26—p. 27

POULTRY INDUSTRY:
Future of Midwestern Egg Industry ... 12—p. 64
Oregon Studies Midget Chickens for Laying Performance, Feed Use ... 5—p. 1
Plan Egg Marketing Organization in New England ... 26—p. 6
Purina Builds Egg Processing Plant, Leases to Armour ... 5—p. 1

POULTRY NUMBERS:
10% Chick Increase Expected by USDA ... 12—p. 1
Hawaii Reports Hike in Number of Layers ... 26—p. 73
Layer Numbers Up Slightly, Egg Records Topped ... 12—p. 4
Marked Cutback in Output of Turkeys Seen ... 26—p. 6
Number of Replacement Birds Bigger Than Seen Earlier ... 26—p. 1

PRICES:
Broiler Prices Down From Week Earlier; Settings Off Slightly ... 19—p. 6
Broiler Prices Fade; Egg Set Reduced 3% from Previous Week ... 12—p. 1
Broiler Prices Slip Further; Placements and Settings Decline 26—p. 1
Economist Says Cattle Prices to Remain Strong ... 12—p. 7
Farm Commodity-Feed Price Ratios ... 5—p. 7
Heavy Disappearance, Curtailed Production Increase Dehy Prices ... 26—p. 1
Hetrogen K Price Reduction Announced ... 26—p. 8
Market Bullishness Said To Be Only Temporary ... 19—p. 1
Phosphate Price Increase Announced ... 26—p. 8
Scarcity Boosts Price on Distillers Grains ... 26—p. 4
Spot Soybean Meal Hits 5-Year High ... 12—p. 1
Spot Soybean Meal Prices Continue to Show Increase ... 19—p. 1
Steady Feed Grain Prices Expected ... 12—p. 97

PRICE SUPPORTS:
USDA Announces Wheat Support Price of $1.82 ... 12—p. 99
USDA Reports '57 Feed Grains Under Suports ... 19—p. 7
USDA To Buy Turkeys ... 26—p. 7

PRODUCTION AND MILL OPERATIONS:
Adapting Mill Services to Area Increases Profits for Utah Firm ... 5—p. 29
Canadian Meeting ... 5—p. 1
Changes in the Feed Business and Their Effects on Production and Handling Facilities ... 26—p. 18
Emphasis on Efficiency Boosts Profits for Illinois Custom Mill 19—p. 18
Kansas Plant Doubles Rate of Output and Reduces Crew—Result Is Tripled Efficiency ... 12—p. 28
Paymaster Opens New Automatic Mill in Dallas ... 5—p. 34
Remodeling Boosts Mill Capacity ... 5—p. 68

PURCHASING:
The Role of the Buyer in Today's Feed Business ... 19—p. 10

REGULATORY:
The Feed Industry Looks at Regulations ... 19—p. 34
Food & Drug Names Detroit District Chief ... 12—p. 7
Plan for Fees on Medicated Feed Applications ... 26—p. 4
New Mexico Changes Feed Tax Procedure ... 5—p. 6

RESEARCH:
Ohio Station to Add Swine Research Farm ... 12—p. 44

SAFFLOWER:
Safflower Production Growing; Meal Value Doubtful; Need Study ... 5—p. 72

SALT:
Scientists Study Salt Need of Young Pigs ... 5—p. 73

SILAGE:
Find Way to Preserve Silage in Plastic Bags ... 12—p. 101

SPICES:
Michigan State Tests Spiced Broiler Rations ... 12—p. 11

SOYBEANS:
Barter Trade For Soybeans Is Opposed ... 5—p. 4
Soybean Crushing Increases in South ... 5—p. 30

STILBESTROL:
Report Second Implant No Help to Steers ... 5—p. 18
Colorado Seeks New Uses for Additives ... 5—p. 58
Arizona Ruminant Meeting ... 5—p. 22
Report Feeding Studies at Western Meeting ... 19—p. 6
Research Reported at Oklahoma State University ... 12—p. 52

SWINE FEEDING:
Dixie Mills Introduces Hog Feeding Program ... 5—p. 26
Research Shows Value of Pig Creep Rations ... 26—p. 27
Research Reported at Oklahoma State University ... 12—p. 52

SYNOVEX:
Illinois Tests Synovex For Beef Cattle ... 26—p. 17

TAPAZOLE:
Arizona Ruminant Meeting ... 5—p. 24

TAXES:
New Mexico Changes Feed Tax Procedures ... 5—p. 6
Revenue Service Defines Terms of Excise Tax Repeal ... 5—p. 4

THYROPROTEIN:
Arizona Ruminant Meeting ... 5—p. 22

UNIDENTIFIED GROWTH FACTORS:
A Breed Difference with Respect to Carry-Over Effect of Unidentified Growth Factors ... 5—p. 44

UREA:
Michigan State Reports on Urea Utilization ... 12—p. 100
Research Reported at Oklahoma State University ... 12—p. 52

VITAMINS:
Arizona Ruminant Meeting ... 5—p. 24
Rhode Island Tests Confirm B_{12} Need in Breeder Rations .. 26—p. 35

WAFERS:
Albers to Distribute New Foragizer for Making Hay "Wafers" ... 19—p. 8

HENRY APR 11 10:30 AM ILL.

WILDER, APR 10 P.M. 1958 MINN.

SELLS APR 1 1 PM 1958 ARIZ.

RAY MAR 28 5 PM 1958 MINN.

EWING MAR 29 10 AM 1958 IND.

PREMIUM MAR 31 1958 KY.

QUALITY MAR 28 A.M. 1958 KY.

MIX MAR 29 P.M. 1958 LA.

QUALITY GOES IN ... THE Ray Ewing COMPANY BEFORE THE NAME GOES ON

PASADENA, CALIFORNIA

BOONE, IOWA
FORT WORTH, TEXAS
COUNCIL BLUFFS, IOWA
LANCASTER, PENNSYLVANIA

Kansas Researchers Report on Liquid Supplement Trials

MANHATTAN, KANSAS—The use of liquid protein supplements in a ration for fattening cattle has shown promise in experiments conducted at Kansas State College, Manhattan, researchers in charge of the test report.

They said cattle on a ration receiving a liquid protein supplement made up of molasses, urea, phosphoric acid and water made a better rate of gain during the fattening phase of the test. Gains were less on the wintering ration, however, they said.

There appeared to be no significant difference in shrink to market, dressing per cent, carcass grade, covering of fat, degree of marbling, size of rib eye or degree of firmness. Addition of ethyl alcohol to the ration, the researchers said, did not tend to make any difference.

It was observed that while total feed consumption was the same for all lots, cattle fed the liquid supplement tended to eat more grain. The researchers, Dr. Draytford Richardson, Ed F. Smith, Dr. B. A. Koch, and Dr. R. F. Cox, all of the animal husbandry department, said the liquid supplement could be mixed easily by the stockman.

Reporting on a related study, Dr. Richardson and two other members of the department, D. L. Mackintosh and R. A. Merkel, said that meat from animals fattened on a ration with liquid protein supplements had the same quality as meat from animals fattened on a regular ration.

ELEVATOR MANAGER CHOSEN

FLETCHER, OHIO — The new manager of Russells Elevator at Fletcher is Lester L. Clark. He has been associated with the firm since August, 1953, serving as assistant manager since that time. Mr. Clark replaces Roy Schnell.

Illinois Turkey Men To Meet at Tremont

TREMONT, ILL.—A tour of turkey production facilities and an educational program are scheduled for the annual fall meeting of the Illinois State Turkey Growers Assn. Sept. 11. The meeting will be at the Sinn Brothers Turkey Farm near Tremont.

The Sinn farm consists of 700 acres which supports a farming operation as well as the production and processing of 40,000 turkeys annually. The turkey-growing part of the business includes a feed grinding and mixing mill and a corn drier. The Sinn Brothers' modern dressing plant has a capacity of 300 turkeys an hour.

The tour part of the program will also include visiting the facilities of growers in the immediate Tremont area, where some 100,000 turkeys are produced annually.

Dr. O. Burr Ross, head of the animal science department at the University of Illinois, will speak at the meeting. Dr. H. M. Scott, head of the poultry department, and Dr. J. O. Alberts, head of the veterinary pathology department, are two other university staff men who will appear on the program.

The announcement of the meeting and program plans was made by S. B. Swann, secretary-treasurer of the association.

Charles N. Silcox Honored by G.L.F.

ITHACA, N.Y.—Charles N. Silcox, executive vice president and former general manager of the 115,000-member Cooperative G.L.F. Exchange, Inc., was honored by his associates at a dinner given recently by the G.L.F. board of directors.

Mr. Silcox plans to retire from G.L.F. Aug. 31. He will continue his connection with G.L.F. as a consultant to management and the board of directors.

A highlight of the evening was the unveiling of a lifesize oil painting of Mr. Silcox and the presentation of a color photograph of the painting to Mrs. Silcox.

J. C. Corwith, Water Mill, N.Y., president of G.L.F., was master of ceremonies. Speakers included J. A. McConnell, Mansfield, Pa., who preceded Mr. Silcox as general manager; E. H. Fallon, Ithaca, general manager, and W. I. Myers, dean, College of Agriculture, Cornell University.

Mr. Silcox saw G.L.F. grow from a small beginning to a purchasing and marketing corporation handling 2.6 million tons of farm production supplies and managing wholesale and retail operations totaling $300 million a year.

Mr. Silcox joined G.L.F. in 1922 and moved to the mills division in 1931. In 1934 he became manager of the flour and cereal department at Buffalo, and three years later returned to Ithaca to become secretary-treasurer of the G.L.F. Holding Corp.

In 1947, Mr. Silcox was named manager of the mills division, and in 1952 he succeeded Mr. McConnell as general manager. Last January, Mr. Silcox became executive vice president of G.L.F., retaining his position as president of the G.L.F. Holding Corp. and the Grange League Federation Insurance Co.

AT OVERISEL FEED SUPPLY CO.

Handling 100 tons a day is a one-man job

WITH A BUTLER BULK-O-MATIC® SYSTEM

John and Dale Voorhorst, father-son feed dealers, materially reduced the cost of operating their Red Comb-Pioneer feed business when they installed the 280-ton Butler Bulk-O-Matic feed depot in Holland, Michigan shown above.

Now, by simply pushing buttons on a control panel located in the office, one man can quickly unload bulk feed from hopper cars into storage tanks or move feed from storage tanks to delivery trucks at the rate of 100 tons a day.

In addition to cutting operating costs, this modern Butler Bulk-O-Matic feed depot attracted so much new business that an extra delivery truck was needed to keep up with the growing demand.

For full details on Butler Bulk-O-Matic bulk feed storage and handling systems and how they can help you boost your volume and cut your operating costs, write the Butler office nearest you.

Special offer . . . Order now and save! Any 6-foot diameter Butler Bulk-O-Matic tanks ordered now for delivery before August 15, 1958 will be shipped freight allowed.

For full details write or call the nearest Butler office

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

Dept. 402, P. O. Box 7027, 1020 East 63rd Street, Kansas City 12, Mo.
902 Sixth Avenue, S.E., Minneapolis 14, Minnesota
1012 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 2, South 27th Street and Butler Avenue, Richmond 1, California

Manufacturers of Equipment for Farming, Dry Cleaning, Oil Production and Transportation, Outdoor Advertising • Metal Buildings • Custom Fabrication
Factories at Kansas City, Mo. • Minneapolis, Minn. • Galesburg, Ill. • Richmond, Calif. • Birmingham, Ala. • Houston, Texas • Burlington, Ontario, Canada

Blatchford's ESTABLISHED IN 1900

NEW FORTIFIERS for LOWER FEED COST!

new **BROILER Vitadine** FOR QUALITY MIXING

"Power packed" with high levels of all essential nutrients including antibiotics, Arsanilic Acid, UGF, Vitamins and Trace Minerals.

new **STARTER SWINEX WITH DYNAFAC**

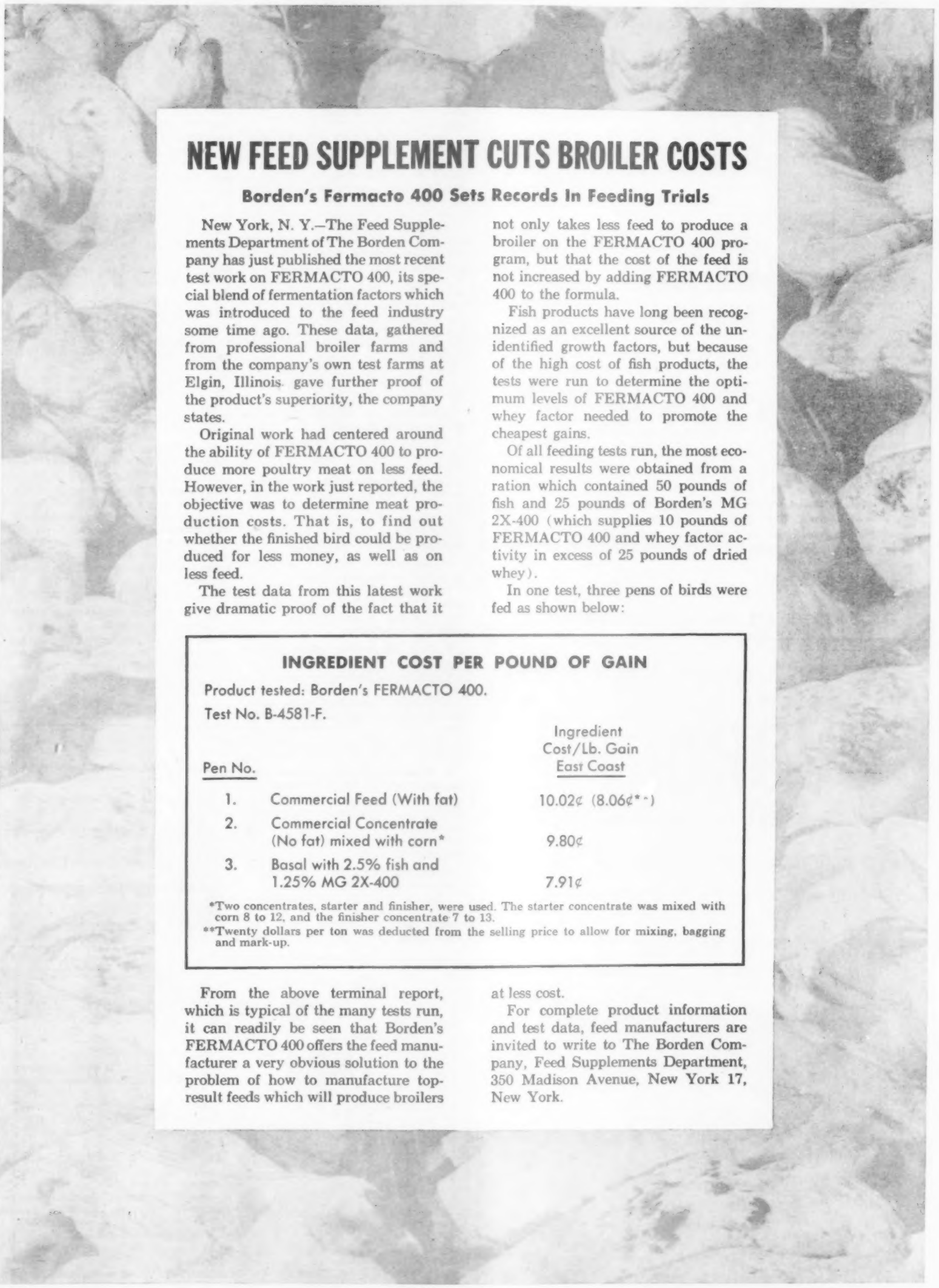
New Growth and Anti-Scours Agent

WRITE **TODAY** For Complete Report on These New Fortifiers!

DEPT. 288

Blatchford's ESTABLISHED IN 1900

Main Plant and Offices WAUKEGAN, ILL. Midwest Plant Des Moines, Iowa West Coast Division Nampa, Idaho



NEW FEED SUPPLEMENT CUTS BROILER COSTS

Borden's Fermacto 400 Sets Records In Feeding Trials

New York, N. Y.—The Feed Supplements Department of The Borden Company has just published the most recent test work on FERMACTO 400, its special blend of fermentation factors which was introduced to the feed industry some time ago. These data, gathered from professional broiler farms and from the company's own test farms at Elgin, Illinois gave further proof of the product's superiority, the company states.

Original work had centered around the ability of FERMACTO 400 to produce more poultry meat on less feed. However, in the work just reported, the objective was to determine meat production costs. That is, to find out whether the finished bird could be produced for less money, as well as on less feed.

The test data from this latest work give dramatic proof of the fact that it not only takes less feed to produce a broiler on the FERMACTO 400 program, but that the cost of the feed is not increased by adding FERMACTO 400 to the formula.

Fish products have long been recognized as an excellent source of the unidentified growth factors, but because of the high cost of fish products, the tests were run to determine the optimum levels of FERMACTO 400 and whey factor needed to promote the cheapest gains.

Of all feeding tests run, the most economical results were obtained from a ration which contained 50 pounds of fish and 25 pounds of Borden's MG 2X-400 (which supplies 10 pounds of FERMACTO 400 and whey factor activity in excess of 25 pounds of dried whey).

In one test, three pens of birds were fed as shown below:

INGREDIENT COST PER POUND OF GAIN

Product tested: Borden's FERMACTO 400.

Test No. B-4581-F.

Pen No.		Ingredient Cost/Lb. Gain East Coast
1.	Commercial Feed (With fat)	10.02¢ (8.06¢**)
2.	Commercial Concentrate (No fat) mixed with corn*	9.80¢
3.	Basal with 2.5% fish and 1.25% MG 2X-400	7.91¢

*Two concentrates, starter and finisher, were used. The starter concentrate was mixed with corn 8 to 12, and the finisher concentrate 7 to 13.

**Twenty dollars per ton was deducted from the selling price to allow for mixing, bagging and mark-up.

From the above terminal report, which is typical of the many tests run, it can readily be seen that Borden's FERMACTO 400 offers the feed manufacturer a very obvious solution to the problem of how to manufacture top-result feeds which will produce broilers at less cost.

For complete product information and test data, feed manufacturers are invited to write to The Borden Company, Feed Supplements Department, 350 Madison Avenue, New York 17, New York.

UP AND DOWN > SIDEWAYS | ACROSS

• • • ANY PLACE ON THE MAP

D. C. A. & Co.
1202 Board of Trade
Chicago 4 Illinois
Tel.—Wabash 2-0028
Teletype—CG 1188

T. D. F. Company
Corn Exchange Bldg.
Buffalo, New York
Tel.—Madison 2323
Teletype—BU 484

BETTER BROKERAGE SERVICE

Harris-Crane, Inc.
221 So. Church Street
Charlotte, North Carolina
Tel.—EDison 2-6148
Teletype—CE 164

Charles J. Koelsch Grain Co., Inc.
209 Grain & Flour Exchange
Boston 9, Massachusetts
Tel.—Hancock 6-3115
Teletype—BS 587

We are linked together to give you better service in all commodities. Our nationwide coverage, with private leased wires connecting all offices, assures prompt, efficient brokerage service. Try us on your next transaction.

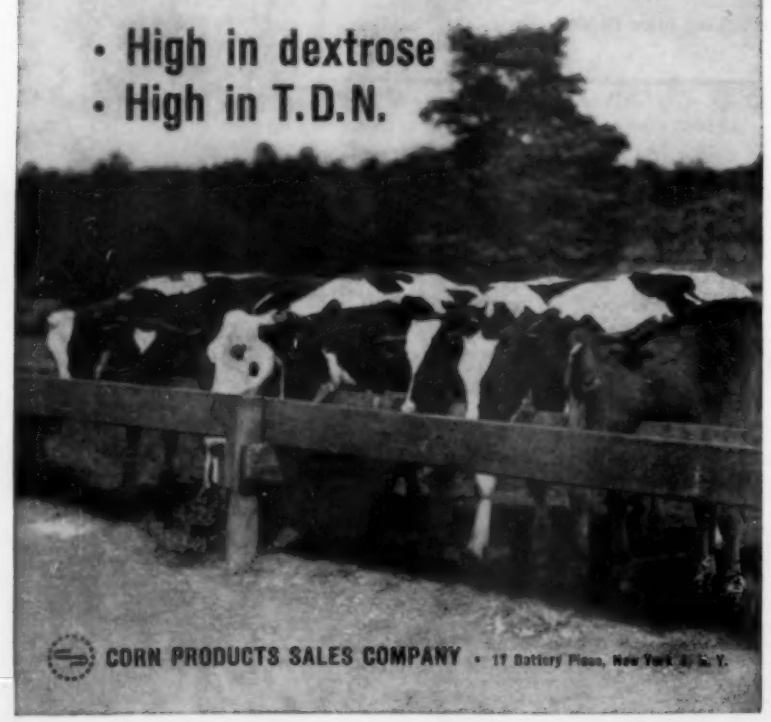
BROKERS IN FEED INGREDIENTS

HYDROL®

feeding corn sugar molasses

a quality ingredient that costs you less and assures profitable feeding...

• High in dextrose
• High in T.D.N.



CORN PRODUCTS SALES COMPANY • 17 Battery Place, New York 4, N. Y.

Questions and Answers on Enzymes In Poultry Rations Containing Barley

A series of questions and answers has been prepared on the possible use of enzymes in poultry rations containing barley.

The answers refer to various college and industry studies on this subject.

The questions and answers are part of a technical paper, including extensive data from various sources, prepared by Dr. Laurent Michaud, animal scientist with Merck & Co., Inc., Rahway, N.J. The paper was issued in connection with Merk's introduction of a new enzyme mixture (Agrozyme). Nutritional values of poultry feeds based on some western barleys can approach the feed values of corn when the new product is added to the ration, Merk says.

The questions and answers and other material in the technical paper include data from Washington State College, other colleges and the Merck Institute.

Following are questions and answers from the paper (not including the tabular material):

1. Can enzymes improve the value of barley for chickens?

Yes. Enzymes from a variety of fermentation sources have been shown repeatedly to improve the value of barley for chickens. Dr. James McGinnis and his co-workers at Washington State College originally demonstrated this effect early in 1957, and since then, this group and others have been able to confirm it.

2. Can enzymes improve the value of barley for turkeys?

Yes. Enzymes from a variety of sources have been shown by Dr. McGinnis' group to improve the value of barley for turkeys.

3. Does the enzyme effect persist until market age in chickens?

Yes, it does. There have been only three experiments reported, but they all resulted in improved gains. Such gains, however, may have been somewhat lower than at four weeks, and so was the improvement in feed efficiency.

4. Does the effect of enzymes persist until market age in turkeys?

Yes, enzymes appear to improve the value of barley for turkeys even when they reach ages above eight weeks. The data available are scant but quite positive.

5. Do enzymes bring the value of barley up to that of corn?

(Results were reported which were abstracted from reports of tests in which the enzymes were fed at various levels. They represented only the groups fed enzymes with maximum effects. Those experiments where only one level of enzyme was evaluated were discarded since such level may not have been optimal and would, it was pointed out, represent an inaccurate picture of the enzyme's activity.)

The Washington workers were able to bring barley up to the value of corn in five out of six experiments in chickens and in five out of eight in turkeys. Dr. Ott, on the other hand, never did show such improvement in six tests, nor did Dr. Arscott (Oregon) in his one reported experiment. On the basis of these results, we cannot, of course, draw definite conclusions.

6. Can enzymes improve barley for other species?

Data on the effects of enzymes in mammals are not available except in rats. Unfortunately, rats do not appear to grow much better on corn than on barley. Consequently, in the one experiment reported by Dr. McGinnis, no response was obtained from the addition of enzymes to barley.

7. Do enzymes improve corn and other grains as well as barley?

It appears possible that enzymes may improve the value of corn for chickens, but this is not at all clearly established yet. Wheat and oats also may increase in value when fed with enzymes, but again more experiments are needed to establish these findings positively. Rye, in the one test reported, did not show up better in the presence of enzymes.

8. Do enzymes improve production of layers fed barley?

No conclusions can be drawn on the basis of the one experiment reported. However, it does fail to show any advantage to the use of enzymes for layers.

(It was noted with work with

Serving the Milling Industry A Complete Line of Quality Grain Processing Machinery for Over a Century.

B&L

BARNARD & LEAS Manufacturing Company INC.

CEDAR RAPIDS, IOWA

"HAVE YOU GOT THAT LET DOWN FEELING???" Send us the copy for your next TAGS and let us get you back on top again. For accurate proofs and fast action, call or write. . . . Jack McAnulty.

THOMPSON PRINTING CO. 3 Russell St., Hammond, Indiana Telephone: WEstmore 3-0776

large animals—swine and ruminants —as well as layers is under way, but insufficient data are available now.)

9. Is the response to enzymes affected by the fat level in the ration?

There is not enough information to draw definite conclusions on the influence of fat level on the activity of enzymes, but what data are available indicate that the fat and enzyme effects are additive.

10. Is the response to enzymes affected by the protein level in the ration?

The same general conclusions may be drawn regarding the influence of protein level on enzyme activity as were drawn on fat levels, namely, that protein concentration is immaterial, but that more experiments are needed to prove this conclusively.

11. What is the effect of enzymes on carcass quality?

We have no data to answer this question.

12. What is the effect of enzymes on feces appearance?

Enzymes definitely improve the "quality" of the feces from chicks fed barley.

13. Are enzymes compatible with antibiotics?

No test has been run specifically to answer this question. However, antibiotics were generally present in the rations tested and certainly did not appear to interfere with the activity of the enzymes.

14. Is the activity of enzymes improving barley stable to pelleting?

The activity of enzymes resists pelleting even though there are indications that it may be lowered ever so slightly. More tests are needed before drawing definite conclusions.

15. Is the activity of enzymes in improving barley stable in feeds?

It appears, from one experiment, that the activity of Enzyme Mixture is somewhat reduced by eight-week storage, but still results in a considerable improvement of barley.

16. How do enzymes compare to water treatment?

The general trend is that water treatment is slightly superior to addition of enzymes in improving barley. It is interesting to note, however, that enzymes may also have an additive effect with that of water treatment.

17. Can enzymes become toxic at high levels?

There have not been any studies specifically aimed at determining the toxicity of enzyme mixtures. However, as a product of experiments on growth, data have been obtained indicating that at least some of the products are innocuous.

18. Do various barleys respond differently to the addition of enzymes?

Dr. Ott reports that "local" Delvarva, Pennsylvania and North Dakota barleys are not inferior to corn and do not respond to enzyme treatment.

Dr. McGinnis has run a three-week test on a variety of barleys grown in the Palouse area of Washington and observed that all were improved by enzymes. The difference, therefore, may lie not in the variety of barley but in the conditions under which it is grown.

Preliminary observations indicate that not all barleys are influenced by enzymes. In the light of present knowledge, the use of such preparations can be expected to be beneficial only where barleys grown in the western states of the U.S. or in western Canada are present in the ration.

SOLUBLE NUTRIENTS, INC.

fermenters of solubles since 1952

A DEPENDABLE SOURCE OF ALL THE UNIDENTIFIED FACTORS PLUS KNOWN WATER SOLUBLE ENTITIES

TECHNICAL SALES OFFICE
FOREST H. CLICKNER & ASSOC.
53 W. JACKSON BLVD.
CHICAGO, ILL. PHONE WE 9-0797

MAIN OFFICE
4701 FULLERTON AVE.
CHICAGO, ILL. PHONE HU 9-3400

QUIET VIBRATOR

CUTS OPERATING NOISE

Vibrator noise is sometimes objectionable, especially when vibrators are used in close proximity to personnel for extended periods.

The Cleveland Vibrator Company offers two types of vibrators to solve this problem. They are the RC and the AC vibrators.

The RC's are electric and operate on a rotating eccentric weight principle. They are an enclosed electric motor with rotating, cam-like weights on each end. The RC's make no more noise than a standard motor.

The AC's are similar to standard Cleveland Vibrators, except that the piston stroke is cushioned by a pocket of air. While noise is not eliminated, it is reduced to an unobjectionable level.

For complete catalogs and prices, write to

THE CLEVELAND VIBRATOR CO.
Dept. F81, 2828 Clinton Ave., Cleveland 13, O.

will your business justify a grain dryer?

HERE'S THE ANSWER . . .

ARID-AIRE PROVES ITS WORTH BEFORE YOU BUY

Now, Arid-Aire takes the "guessing" out of grain drying. With Arid-Aire's trial plan you *know*, from facts based on your own elevator's figures, whether your business will justify *any* grain dryer. Only Arid-Aire offers you this opportunity to prove to yourself, *before you buy*, that grain drying *is* profitable. You'll discover Arid-Aire builds profits, promotes business and pays for itself. In fact, a single season can repay you more than an investment in Arid-Aire.

Compare Arid-Aire with any other grain dryer. *Arid-Aire is factory assembled* — ready to operate when delivered. *Arid-Aire is cleaner* — self-cleaning design saves time and work. *Arid-Aire is automatic* — requires no loading, unloading or operating attendance. Start it and walk away! *Arid-Aire is insulated* to increase efficiency and protect against weathering. *Arid-Aire is horizontal in design — there's no pressure, no packing, no plugging.* All grain is gently handled.

There was never a better time to find out about Arid-Aire than right now. Mail coupon today for latest information.

Manufactured by

DAYCOM, INC.

A DIVISION OF *The* **DAY** *Company*
811 Third Avenue N.E., Minneapolis 13, Minn.

MAIL TODAY

Please send me complete information about the Arid-Aire grain dryer and Trial Plan offer.

Name_____

Address_____

City_____ State_____

Pass on Labor Saving Ideas

By Al P. Nelson

When Milt Peters strode into Joe Brooks' office that morning a half hour after mail time, he looked very cocky and confident. This was natural with the sandy haired employee who liked redheads, fun and who was quite a practical joker. On the other hand he had a good business head, was an efficient worker when he felt like it, and he could carry on a conversation with just about anyone. Which made him a good fellow to have around a feed mill meeting customers.

"Hi, Joe," Milt called breezily. "Can you spare a few minutes?"

"Why sure," Joe said, looking up from his mail. He was now down to magazines and third class and could read those later. "Sit down and tell me about your idea."

"How do you know I've got an idea?" Milt asked.

"By the way you look, and by that photo in your hand."

Milt grinned. "Yeah, I do have an idea, Joe, but I wouldn't have it if it weren't for one of my redheads."

"Now, Milt," remonstrated Joe, while Rusty Hagen, the runtish bookkeeper, grinned into his ledgers, "you know I've told you not to talk about your red headed girl friends during business hours. Such talk disrupts discipline, and Pop especially gets angry. What you do after hours doesn't concern me—but please, not during working hours."

"But, Joe," protested Milt, "I have to talk about redheads here to you today, for they concern this idea of mine. You see, I've got all of them posted. I tell them to look around and see what ideas farmers are using that we can take advantage of in the feed business. Those gals like me so much, they really are learning something about farming. They even know something about antibiotics. Funny to what lengths women will go when they're crazy about a guy." Milt sighed. "My trouble is I don't like to get more than four phone calls a night."

Joe coughed. "You said you had a business idea?"

Milt Produces a Photo

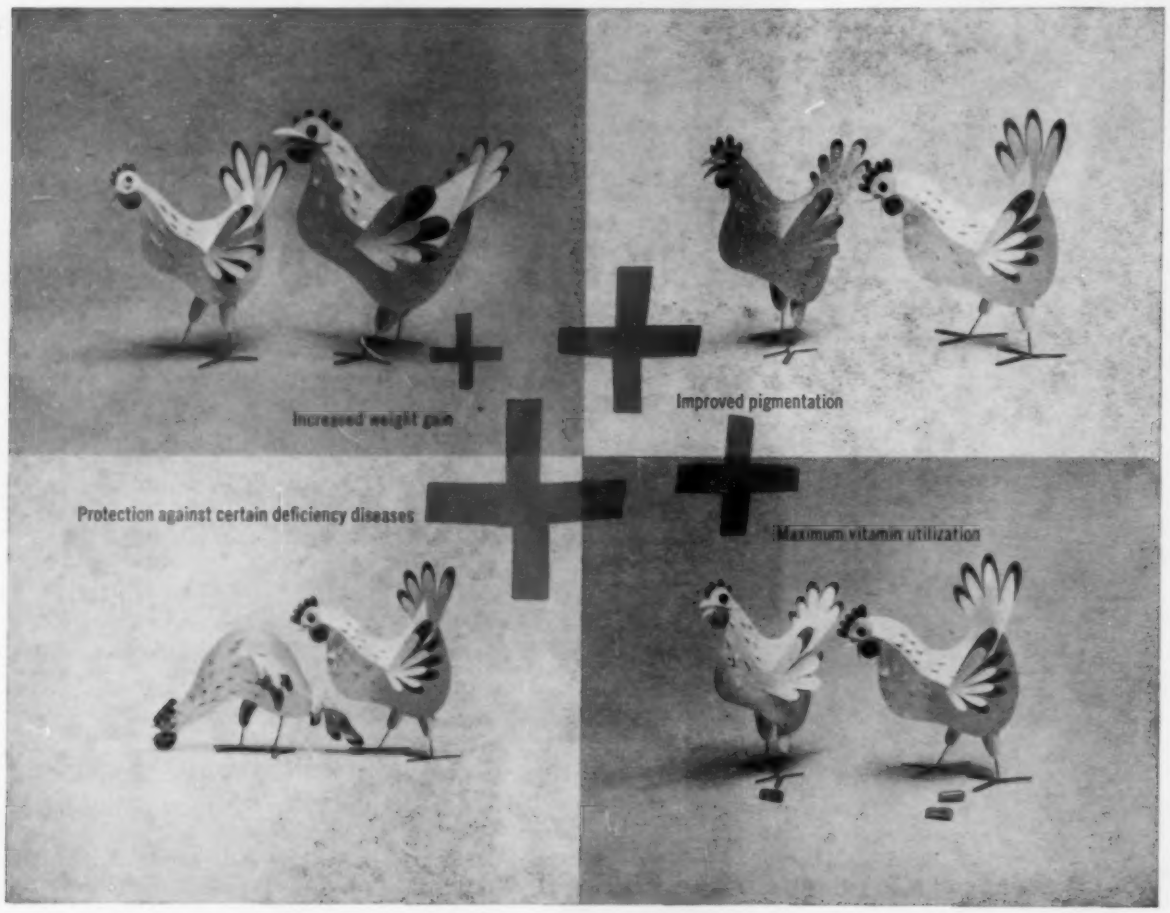
"Oh yes," Milt said. He handed the photo to Joe. "One of my redheads tells me of a farmer who invented a new kind of farm gate, Joe. The farmer got tired of getting out to open gates all the time. So he constructed a gate with weights and a long rope. When the farmer drives up to a gate, he rolls down the car or truck window, reaches out pulls a rope and up goes the farm gate. When he gets through, he grabs another rope, pulls it and down goes the gate."

The brown haired feed dealer leaned back in his swivel chair and laughed. "Say, that's quite an idea, Milt. But how do you figure we can use it to sell more feed?"

"I knew you'd ask me that, and I wouldn't be wasting your time telling you about this idea if I didn't think we could cash in on it one way or the other. You've always taught us the commercial application of ideas."

"Wonderful," smiled Joe. "You're a good pupil. Profit makes this business tick, you know."

Milt crossed his leg. "Joe, practi-



Your feeds supply these extra performance factors when they contain Tenox BHT

AGRICULTURAL GRADE

an Eastman antioxidant for feeds

Here are four sound reasons for incorporating Tenox BHT-Agricultural Grade into your feeds.

Tenox BHT protects the all-important vitamin balance you build into your feeds.

Tenox BHT improves pigmentation in poultry by increasing the utilization of Vitamin A.

Tenox BHT increases weight gain by maintaining maximum nutritional content right up to the time the feed is used.

Tenox BHT protects poultry against certain deficiency diseases.

Tenox BHT-Agricultural Grade is free-flowing, non-dusting, non-caking. Its particle size is similar to that of other feed ingredients. It blends quickly and does not separate during handling or storage.

Tenox BHT-Agricultural Grade was developed to meet the specific needs of poultry feed manufacturers. It is the result of information provided by feed manufacturers combined with our own extensive knowledge of antioxidant performance.

Build extra performance into your feeds by specifying the antioxidant specially made by Eastman for feed use...Tenox BHT-Agricultural Grade. Tenox BHT-Agricultural Grade is available from leading distributors throughout the country. To find out how you can use this antioxidant in your feed formulations, write today to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of the Eastman Kodak Company, KINGSPORT, TENNESSEE.

Tenox BHT-Agricultural Grade available in 2 forms

1. Tenox BHT (Conc.)-Agricultural Grade which may be added to your own diluent.
2. 25% Tenox BHT Premix, containing 25% BHT on a nutritive cereal carrier.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City, 260 Madison Ave.; Framingham, Massachusetts, 65 Concord St.; Cincinnati, 1813 Carew Tower; Cleveland, 13212 Shaker Square; Chicago, 4200 Dempster St., Skokie, Illinois; St. Louis, 10 South Brentwood Boulevard; Houston, 1300 Main St. West Coast: Wilson Meyer Co., San Francisco, 333 Montgomery St.; Los Angeles, 2060 South Garfield Ave.; Portland, 520 Southwest Sixth Ave.; Salt Lake City, 73 South Main St.; Seattle, 318 Queen Anne Ave.; Denver, 851 North Broadway; Spokane, 422 West Riverside; Phoenix, 111 West Osborn Road. Canada: P. N. Soden Co., Ltd., Montreal, Quebec, 2143 St. Patrick St.; Toronto, Ontario, 41 Advance Road.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

JOHN F. YOUNG COMPANY
3270 Southside
Cincinnati 4, Ohio
WAbash 1-1950

We Are Distributors of Eastman Chemical Products, Inc.
Tenox BHT

cally all farmers are interested in time saving, labor saving ideas. In this mechanical age they know that such ideas mean money to them. Especially since a lot of farmers are getting along without a hired man."

"Yes?"

"So—why don't we run a contest asking farmers to tell us about their time saving and labor saving ideas, feed or otherwise? Then we'll go out and take a picture of it and post the picture on a special bulletin board area in the store. We'll advertise that we've got such pictures, and invite farmers to come in and see them. The typed descriptions of the ideas will be right below the pictures."

"And not publish the pictures in the newspaper ads?"

Milt shook his head. "No, not yet. We want farmers to come to the store to see them. We want the extra traffic. If you publish the pictures in the paper, you won't get that increased traffic. Later on, when the contest fervor has died down, then we can publish the pictures as a good will building stunt, but not now."

Joe looked very thoughtful. "Your idea has a lot of merit, Milt, but will we need prizes to go with this deal? Will farmers go to all the trouble of letting us know what their time and labor saving ideas are—if they don't get rewarded?"

$3 Certificate

"Some will, and some won't, Joe. I'd say that we give each farmer a print of the picture we take. Then we also give him a $3 merchandise certificate because his idea made the bulletin board. That way we know he'll use that certificate to buy something in the store, maybe to apply on a ton of feed. I'm a firm believer in giving away merchandise certificates as prizes, not dollars. Give a man cash for an idea and you've no

EXPELLER

SOYBEAN OIL MEAL
AND **PEASIZE CAKE**

43% PROTEIN — 4% FAT

The High - Fat, High - Protein, High - Energy
Basic Ingredient for All Feeds and

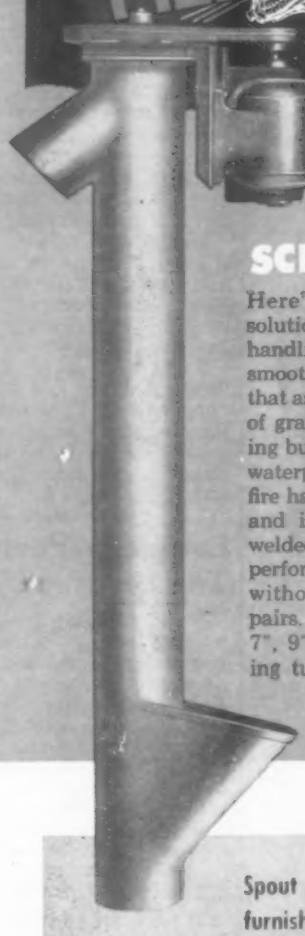
DOG FOOD RATIONS

PREFERRED by Feed Manufacturers from Coast to Coast
AVAILABLE in carloads and trucklots throughout the year from our centrally located plant

ILLINOIS SOY PRODUCTS COMPANY
SOYBEAN PROCESSORS
P. O. Box 53 SPRINGFIELD, ILLINOIS Phone 23391

KELLY DUPLEX ELEVATORS

The efficient, economical way to handle your grain

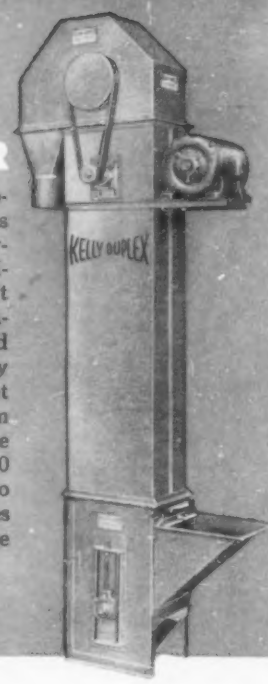


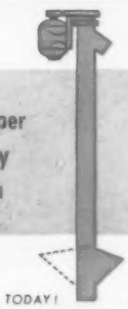
VERTICAL SCREW ELEVATOR

Here's the modern, money-saving solution to any number of material handling problems—an elevator that's smooth and noiseless in operation . . . that assures efficient, uniform delivery of grain and other types of free-flowing bulk materials. It's dustproof and waterproof . . . reduces accident and fire hazard . . . requires less space . . . and is easy to install. Rugged, arc welded steel construction assures top performance year in and year out without costly breakdowns and repairs. Available with choice of 4", 6", 7", 9", 12" or 14" diameter conveying tube.

LOW COST BUCKET ELEVATOR

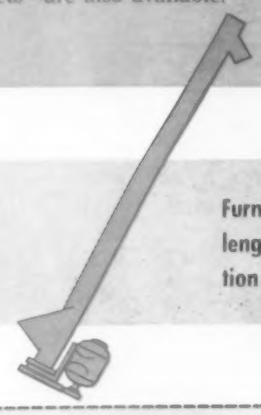
Engineered for quiet, high speed operation . . . this machine elevates material smoothly and cleanly—delivers peak capacity—and assures positive discharge without back-legging. It has rugged steel and ball bearing construction throughout—is compact and self-supporting—and is completely weather and dust tight. Built to meet your needs, it can have a capacity from 100 to 3300 bushels per hour—can be built to any exact height up to 100 feet—and can have either one or two intakes. 2 and 3 way discharge valves —and distributors with four or more outlets—are also available.





Spout and hopper furnished in any desired position

Drive unit can be installed at either end of elevator



Furnished in any length for installation at any angle

CLIP ALONG THIS LINE . . . FOLD OVER, FASTEN AND MAIL TODAY!

FIRST CLASS
Permit No. 72
SPRINGFIELD, OHIO

VIA AIR MAIL

BUSINESS REPLY ENVELOPE
No postage necessary if mailed in the United States

POSTAGE WILL BE PAID BY

The Duplex Mill and Manufacturing Company
Springfield, Ohio

FOLD OVER ON THIS LINE . FASTEN (STAPLE, GLUE, TAPE)

The Duplex Mill & Mfg. Co.
Springfield, Ohio

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

☐ Send me information on Free Mill Planning and Layout Service

☐ Vertical Screw Elevator
☐ Vertical Feed Mixer
☐ Instant Change Hammermill
☐ Remote Change Hammermill
☐ Twin Molasses Mixer
☐ Pit Auger
☐ Electric Truck Hoist
☐ Chain Drag
☐ Corn Sheller with Blowers
☐ Regular Corn Sheller
☐ Pitless Corn Sheller
☐ Combined Sheller-Cleaner
☐ Bucket Elevator
☐ Corn Scalper
☐ Corn Crusher
☐ Corn Cutter and Grader
☐ Corn Crusher-Regulator
☐ Gyrating Cleaner
☐ Electric Bag Cleaner
☐ Forced Air Carloader
☐ Magnetic Separator
☐ Grain Feeder
☐ Grain Blower
☐ Complete Line Catalog

NAME _____

TITLE _____ PHONE _____

FIRM _____

CITY _____ STATE _____

good news gets around...

Shellbuilder's Profitable

Shellbuilder Company
Melrose Bldg., Houston

assurance he'll spend the cash in your store. But he will spend the merchandise certificate."

Joe chuckled. "Milt, you certainly are learning a great deal from our merchandise sessions. I like your idea, and I believe it will work out. We'll run an introductory ad. I think we should publish one idea to give farmers a clue to what we want—maybe this gate idea. But after that no more pictures until the contest is over. I agree, we want this stunt to build store traffic."

Milt seemed quite happy that Joe liked his idea and he smiled broadly. "I'm glad to show you that I don't sleep on feed sacks all the time, Joe."

"This idea is worth $10 to us, Milt. It'll be tacked on your next pay check."

Milt shook his head. "Thanks, Joe, not this time. I'll donate the check back to the firm. Then let's consider it sort of back pay to you for the time I slept on feed sacks after a hard night."

"Well," hesitated Joe, "if that's the way you want it. Only, Milt, let's not get into a habit of compensation like this. Let's stay upright all day long during working hours—on our feet. I'd prefer it that way."

Milt saluted. "Okay, Joe, I'll give it a real try," he smiled. "You know me. Once I set my mind to a thing—well, I'd better not promise too soon." He got up and went off whistling.

Joe turned to Rusty Hagen. "Milt's got fire and dash," he said. "And he's all right when he directs those qualities to his work. On the days when he directs those qualities elsewhere, we suffer." And both Joe and Rusty laughed.

Norman Walker

TRAFFIC MANAGER—The appointment of Norman Walker as traffic manager of Dannen Mills, Inc., St. Joseph, Mo., has been announced by Dwight L. Dannen, president of the company. Mr. Walker was formerly assistant traffic manager for Flour Mills of America, Kansas City, and has had a number of years of experience in grain, feed and milling traffic work.

Louisiana Poultrymen To Meet Sept. 7-9

NEW ORLEANS — The annual meeting of the Louisiana Poultry Improvement Assn. will be held here Sept. 7-9, according to Clyde Ingram, executive secretary.

The meeting will be held in the Jung Hotel. Attending will be hatcherymen, feed mill operators and dealers, poultry processors, broiler growers and flock owners.

Details of the program will be announced later, Mr. Ingram said.

ERECTS STORAGE BUILDING

TULSA, OKLA. — A flat storage building designed to store 750,000 bu. grain is being constructed for the Triplett Grain Storage Co., Tulsa, at its location in Catoosa, Okla.

NEW SEEDBURO Steinlite MOISTURE TESTER MODEL 500 RC

The improved, more convenient way to make YOUR GRAIN Moisture Tests!

CHECK These Convenience Features 25 Years of Research Have Made Possible

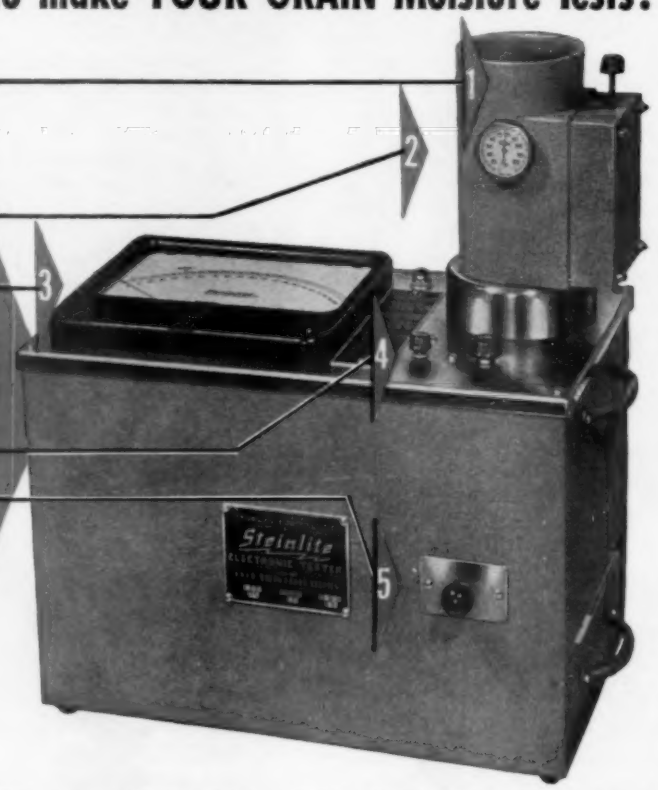
1 NEW ROUND FUNNEL — handles larger (250 gram) sample ...allows a more uniform drop into test cell

2 EASY-TO-READ, BUILT-IN, EYE LEVEL THERMOMETER

3 LARGE 9 INCH METER with ONE SCALE for ALL moisture ranges...Read from level position for absolute accuracy

4 ONE BUTTON CONTROL FOR ALL MOISTURES

5 SELF-RETURNING TEST CELL SLIDE — snaps back automatically after tested sample drops into grain drawer



Now Test from a larger, more representative 250 gram sample for:

Corn, Soybeans, Wheat, Flax, Oats, Barley, Rice, Rye, Sorghums

NOTE: Tests are equivalent to the basic standards of the U.S.D.A.

You'll have to put the New Seedburo Steinlite Model 500 RC through its paces to find how easy and conveniently this improved model makes moisture tests. You simply drop the larger, more practical 250 gram sample into the test cell and read the meter...simple as that.

As added safety features the funnel resets itself automatically to hold next sample. Test cell slide snaps back automatically after tested sample is dropped into grain drawer...no danger of spilling new sample through open test cell.

Remember, for the fastest, most accurate moisture testing operation depend on the Seedburo full line of moisture testers—and for the improved and more convenient way to run grain moistures—ask about the New Steinlite Model 500 RC. Full information and the famous Seedburo service is as near as your phone.

For Full Information

WRITE, WIRE or PHONE
ANdover 3-2128 COLLECT

SEEDBURO EQUIPMENT COMPANY

618 W. Jackson Blvd., Chicago 6, Ill. Dept. F5-8

FISH MEAL · FISH SOLUBLES
LIVER MEAL—VITAMIN OILS
FEATHER MEAL—FEED INGREDIENTS
ALBUMINA SUPPLY CO., INC.
82 Beaver St., New York 5, N. Y.

NELLIS
FEED COMPANY
Brokers
of Feed Ingredients
4010 Board of Trade Bldg.
WAbash 2-7322
TWX 623
Chicago 4, Ill.

Now it takes ONLY HALF AS MUCH to produce maximum growth

MORE CONCENTRATED MORE CONSISTENT

a primary fermentation source of unidentified GROWTH FACTORS

After six years of exhaustive testing, results prove NeoVite to be your best source for unidentified growth factors. Since 1952, when Dawe's Laboratories developed NeoVite, extensive feeding trials, both in the laboratory and under practical field conditions, established NeoVite's ability to stimulate growth above that expected from usual UGF sources. NeoVite's consistency to produce these results is a tribute to Dawe's Laboratories quality-control through biological testing.

Now, Dawe's Laboratories is proud to offer proven tested NeoVite in a more concentrated form. It actually takes only half as much to produce the same dependably consistent results. The advantages are obvious to every feed manufacturer.

Test New Concentrated, Consistent NeoVite *at our expense* . . . Write us for NeoVite product data. Dawe's will be pleased to supply NeoVite to you at no charge for your test purposes. There is no obligation.

World's Oldest and Largest Specialists in Vitamin Products for Feeds

Dawe's

Plants and warehouses strategically located throughout the United States to serve you without delay.

DAWE'S LABORATORIES, INC.
4800 South Richmond Street
Chicago 32, Illinois

FOREIGN OFFICES:
BELGIUM—13 Courte rue des Claires, Antwerp ITALY—Corso Magenta 81/83, Milan MEXICO—Sierra Leona 755, Mexico 10, D. F. VENEZUELA—Apartado 3050, Caracas

Visit Dawe's Booth at the World's Poultry Congress in Mexico City

Michigan Feed Group Schedules Conference At MSU Oct. 16-17

EAST LANSING, MICH.—The annual Conference of the Michigan Feed & Grain Assn. has been scheduled for Oct. 16-17 at Michigan State University. Sponsored by the association and the MSU College of Agriculture, the conference will be held at the university Kellogg Center.

A display of bulk feed equipment will be one of the highlights of the event. It will be set up in the livestock pavilion.

"Planning, Merchandising and Selling for Greater Profits in 1959" will be the theme of the conference. Speakers from the university staff will discuss such subjects as economic outlook, salesmanship, merchandising and others.

Larry Smith, Lake Odessa, association president, will keynote the program Oct. 16 with the annual president's address.

The program will be completed with confirmation from several of the invited speakers.

To Build Hatchery, Mill in Mississippi

FOREST, MISS.—A new hatchery with a capacity of 30,000 a week and a new mill capable of prŏducing up to 100 tons of feed daily is being built in Forest by Ed Gaddis. Construction will begin soon, and is expected to be completed about Dec. 1.

Mr. Gaddis formerly had sold most of his poultry interests to a brother, and concentrated on his automobile dealership business. He said he plans to build three new 30,000-capacity poultry units on property that he owns, and will actively manage all seven of his farms when the hatchery and feed mill start operating.

Cattle in Canada Show Slight Decrease

WINNIPEG—An increased flow of slaughter, feeder and dairy cattle into export channels since June, 1957, together with domestic slaughter equal to last year, has left Canada's farm cattle population on June 1, 1958, 2.5% below the June, 1957, total, according to the Dominion Bureau of Statistics' livestock survey issued Aug. 5. All cattle and calves totaled 11,001,000 head June 1, this year, compared to 11,296,000 a year ago.

In eastern Canada, where cattle are estimated at 5,376,000 head, the decrease amounted to 2% with all provinces contributing to the drop in numbers. In the West, where the total is estimated to be 5,625,000 head, the decrease was 3%.

Cows kept for milking decreased to 3,129,000 head from 3,147,000 as of June 1, 1957. A significant decrease was recorded in the Maritime provinces.

Under the influence of continuing good markets, cows kept for beef purposes rose 1% in number to 2,004,200 head. However, other beef cattle (heifers and steers) decreased nearly 10% in the eastern provinces and 19% in the west.

Total sheep and lambs on farms June 1 were estimated at 1,696,000 head, about 2% above the 1957 estimate.

New Feed Mill Being Built at Ft. Smith

FT. SMITH, ARK.—A new $75,000 feed plant is being built at Ft. Smith by the F. S. Neely Co.

Semi-automatic in operation, the new plant was designed by Millco, Inc., construction division of Ross Machine & Mill Supply, Inc., Oklahoma City.

Included in the plans are Butler Bulk-O-Matic storage bins, S. Howes mixing, cleaning and molasses equipment; a California pellet mill; Jacobson mills; elevators and related equipment manufactured by the Ross firm. Also being installed is a 15,000-gal. molasses storage tank and pit unloader direct from rail siding.

The mill will be equipped for handling all types of custom work, as well as marketing its own feeds. It is expected that bulk delivery service for large feeders will be added early in 1959.

The mill will have a capacity of 70 tons a day. Included in the product line will be specialty pellets for broiler feeding, rolled and crimped grains, pellets and molasses feeds.

The mill is expected to be in operation before Oct. 15, 1958.

NEW MILL INSTALLATION

OLIVIA, MINN.—Nine steel bins have been installed on the roof of the new O & M Mill building here for holding grains and concentrates to be used in feed mixing.

Turkeyland USA reports on
Whitmoyer
CARB-O-SEP
Patent Pending
MAIL
NO BLACKHEAD OUTBREAKS ON CARB-O-SEP
Not one case of blackhead with CARB-O-SEP fed birds, although blackhead was prevalent through his entire area reported a mid-western serviceman.
CHAMPIONS CARB-O-SEP FED
CARB-O-SEP fed birds dominated the championships at the Michigan Turkey Festival. Five Grand Champion birds and the Largest Bird at the Show were CARB-O-SEP fed.
FEED MANUFACTURER TESTS CARB-O-SEP AGAINST ANOTHER LEADING PREVENTIVE
No outbreaks on CARB-O-SEP . . . three outbreaks in other group. CARB-O-SEP birds were in better shape at marketing . . . feed conversion was better.
PENNSYLVANIA GROWER ENDS RANGE BLACKHEAD PROBLEM
Blackhead outbreaks were an annual problem. Last year he tried CARB-O-SEP and raised top quality birds—with no blackhead losses.
BREEDER AND GROWER PUTS ALL HIS TURKEYS ON CARB-O-SEP
5,000 breeders and later in the season 30,000 meat birds put on CARB-O-SEP. Fertility and hatchability good .
PROMINENT EASTERN GROWER CLEARS UP BLACKHEAD
This grower, with a flock of 40,000 Broad Breasted Bronze Turkeys, found CARB-O-SEP cleared up blackhead and prevented any further losses. The birds were marketed with a good finish.
CARB-O-SEP FED BIRDS WIN AT NATIONAL TURKEY CONVENTION
CARB-O-SEP fed entries were among the important prize-winners at the National Turkey Convention at St. Louis.
CARB-O-SEP was developed by WHITMOYER research.
It is the safe, potent way to get healthy, blackhead-free growth.
MIX CARB-O-SEP IN YOUR TURKEY MASH
Give your turkey mash the best opportunity to furnish the full measure of fast, healthy growth that you so carefully put into it.
IT'S PROFITABLE FOR BOTH YOU ...AND THE GROWER
Whitmoyer LABORATORIES INC
MANUFACTURING CHEMISTS
MYERSTOWN, PENNA., U.S.A.
PRODUCTS OF SCIENTIFIC MERIT
For complete information and scientific data on CARB-O-SEP
Write Box FS-8 • In Canada Whitmoyer Laboratories, Ltd., Port Credit (Toronto Twp.), Ontario

THE BEST ROLLER MILL MADE
W-W crimps, cracks or crumbles every kernel. Has hardened "mill-type" rolls; single control wheel adjustment; heavy cast iron framework. Available in 6" to 36" widths. Sensible time-payment plan.
W-W GRINDER CORP.
DEPT. 511—2957 No. Market Wichita 4, Kans.

DISTRIBUTED BY THE FOX COMPANY
FOXCO QUALADEE
A and D VITAMIN OIL
NEWFIELD, NEW JERSEY
"PRODUCTS OF PROGRESS"

SW
FOR THE BEST IN
HORIZONTAL MIXERS
SPROUT-WALDRON
MUNCY, PENNA.

*Precision Reproduction

A complete, experienced "Background" in quality controlled printing guarantees clean, accurate reproduction of trademarks and company identification for every Raymond Multiwall customer. Creative developments such as Raymond Background Printing give added sales impact. Check the important advantages of Raymond "Background" printing with your Raymond Representative. He'll be glad to show you how they can work for you.

Special Problem? New multiwall developments may be the answer. Write Raymond Bag Corporation, Research & Development Division, Middletown, Ohio.

Raymond
BAG CORPORATION
A division of Albemarle Paper Mfg. Co.
MIDDLETOWN, OHIO • RICHMOND, VA.

PLANS NEAR COMPLETION—Plans for machinery demonstrations and programming for the 1958 Feed Production School are nearing completion, according to Loren Burns, recently appointed production school coordinator. Mr. Burns, vice president of Mel Miller & Co., Kansas City, is assisted by Bill Kamp, formerly with Ralston Purina Co., and other members of the Miller organization. The school will be held Nov. 12-14 in Kansas City. Mr. Burns said more than 30 equipment firms will provide demonstrations that tie in with the school program and dramatize the bulk handling research project and the Small Mill Short Course, which will be part of the school. He and Mr. Kamp are shown with production school committee members in the above photo. Seated, left to right: Calvin Hunzeker, O. A. Cooper Co., Beatrice, Neb.; Mr. Kamp; Eric Carlson, Ralston Purina Co., St. Louis; J. D. Johnson, General Mills, Inc., Minneapolis (committee chairman); Carl Vosloh, U. S. Department of Agriculture, Washington. Standing: Lloyd Larson, Midwest executive vice president; J. B. Black, General Mills, Kansas City; Max Cooley, Hoffman-Taff, Inc., Springfield, Mo.; Mr. Burns; G. A. Carlson, Strong-Scott Mfg. Co., Minneapolis.

Feed Firm Schedules "No-Money" Auction

MOBERLY, MO. — The fourth annual "no-money" livestock auction of the F. M. Stamper Co. Mill, Moberly, has been scheduled for Sept. 6 at the Stamper turkey farm two miles east of Moberly.

All 4-H, farm youth club members, FFA and FHA members, their parents, leaders and teachers are invited. Any farm youth between the ages of 9 and 20 as of Dec. 31, 1958, may participate in the auction of animals and chicks for club and school projects.

Twenty-five calves from registered herds, 30 registered gilts and 1,000 pullet chicks (in lots of 100) will be "sold" to the highest bidders. Stamps from Stamper feed will be used instead of money. The stamps must be tied or banded in packages of 100 and registered between 8 and 10 a.m. on the day of the auction. Registration closes at 10:30 a.m. Stamps may be registered either in the name of an individual or group (club or class), but only registered bidders will be permitted to bid on animals and chicks.

Ten additional calves will be offered in the "calf scramble." To participate in this event a club or group must register stamps and exchange for certificates first, then register attendance in a group and show its 1958 stamp certificates. At least six members and a leader must be registered to be considered for participation. The more members present and the more stamps registered, the better are a club's chances of being selected for participation.

California Feed Dealers Hear Management Talk

SAN FRANCISCO — "Profits Are as Broad as You Think" was the topic of a speech by John W. Lagsdin, executive development consultant for the Alexander Hamilton Institute of New York, at a meeting of the North Bay district of the California Hay, Grain & Feed Dealers Assn. recently.

Mr. Lagsdin talked about factors which have led over 1,600 executives to reassess their own know-how and bring their day-to-day working knowledge up to par with current economic and business demands. He also brought into focus methods being employed by business men to couple their native ability with organized business knowledge to insure further development and profit growth in their business.

"Profits disappear in the ratholes of a man's own making" was his pointed conclusion as to why so many men fail to get optimum results from their business efforts.

Urge Early Registration For Poultry Congress

LAFAYETTE, IND. — A reminder to poultry industry men planning to attend the 11th World's Poultry Congress in Mexico City Sept. 21-28 has been issued by Robert L. Hogue, Purdue University, coordinator for the U.S. committee for the Congress.

"It is of utmost importance that all persons planning to go to the Congress register in advance with the Mexican committee so that registration material, special cards and other items will be prepared in advance of the delegates' arrival. The Mexican committee will also forward special material from Mexico, in addition to other material being held," Mr. Hogue stated.

Copies of the special registration forms may be obtained from Mr. Hogue at the Poultry Science Building, Purdue University, Lafayette, Ind.

Dow Reports Earnings

MIDLAND, MICH. — The Dow Chemical Co. has reported sales of $636,201,143 and earnings after taxes of $46,059,181 for the fiscal year ended May 31. Both figures represent declines from the preceding year when adjusted for income of The Dobeckmun Co., which became a part of the Dow organization during the year.

Leland I. Doan, president, noted that earnings were particularly disappointing "due to a combination of reduced levels of operation and the continued pressure on profits inherent in the cost-price squeeze." Chemicals accounted for 52% of Dow's sales, plastics 35%, magnesium 7% and agricultural chemicals 6%. It was noted that sales of agricultural chemicals held up well, showing some gain over 1957. Research, the company said, is leading to new animal health products.

aerate
your small
storage

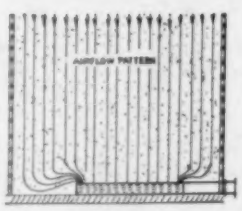
with this low-cost
DO-IT-YOURSELF aeration package

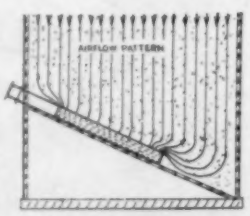
Now you can have top quality Rolfes aeration, specifically designed for bins from 3,300 to 10,000 bushels. The new Rolfes POWERATOR offers you the same outstanding performance for small storage as the large Rolfes systems that safeguard many of the country's largest elevators.

You get genuine Rolfes aeration at a new low price . . . thanks to a design so simple and efficient that you can make the entire installation yourself.

The engineering's built right in to save you time and money. We supply the Rolfes Aeration know-how in this convenient package system . . . you just set it up, using the simple but complete instructions that are furnished.

Get the facts on this new POWERATOR . . . contact your Rolfes representative or mail the attached coupon. We'll send you the complete story on this amazing new advance in aeration.





The POWERATOR gives you perfect aeration in either flat or hopper-bottomed bins. Available in 8" duct for your smaller storage, 12" duct for bins up to 10,000 bushels. Fans for each size are removable, portable, and completely weather-tight. Fan operates on either 110 or 220 volts.

ROLFES
GRAIN AERATION
COMPANIES
BOONE IOWA

ROLFES GRAIN AERATION COMPANIES
BOONE, IOWA
Gentlemen:
Rush me complete information, including new low prices, on the POWERATOR do-it-yourself aeration package.
NAME_____
FIRM_____
TOWN_____ STATE_____

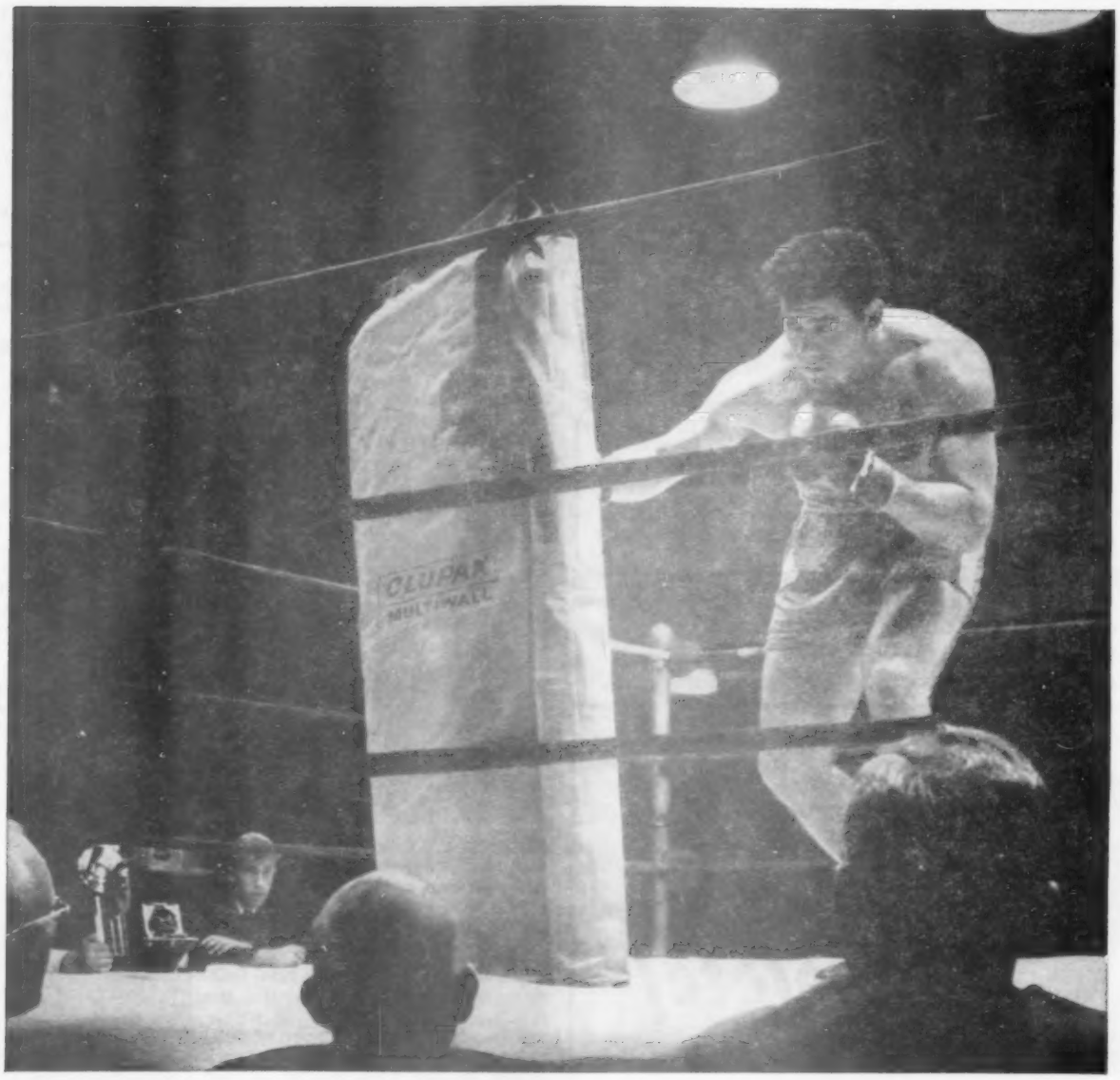
Through the years, PILOT BRAND Oyster Shell has been first choice with poultry raisers everywhere. That's because PILOT BRAND is almost 100 per cent calcium carbonate, the perfect eggshell material. Test after test proves that PILOT BRAND helps produce more eggs with stronger shells.

The big, day-in, day-out demand for PILOT BRAND means steady sales, fast turnovers, good profits for you. And we help keep customers coming your way with consistent national advertising in leading farm and poultry journals and on more than 70 prominent radio stations.

Order from your distributor . . . or write to us.

PILOT BRAND OYSTER SHELL
FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama



THE

Toughness Champ CAN TAKE IT

OUR CLUPAK* MULTIWALLS

These new multiwalls can take punishment that knocks out—actually breaks—ordinary multiwalls.

Our new bags are made with Kraftsman Clupak paper that's much tougher because of a patented, built-in "stretch." You can maul these new bags—store, transport, use them with a roughness that wrecks old-fashioned multiwalls.

And these new bags *cost no more* than the old ones!

Our Clupak multiwalls are available now in these types: Pasted Open Mouth, Pasted Valve, Sewn Valve, Sewn Open Mouth and Stepped End.

All of them are lighter and tougher. Try them . . . on your next carload order, let us include a trial shipment of 5,000 of our Clupak multiwalls. Call or write:

*Clupak, Inc.'s trademark for stretchable paper.

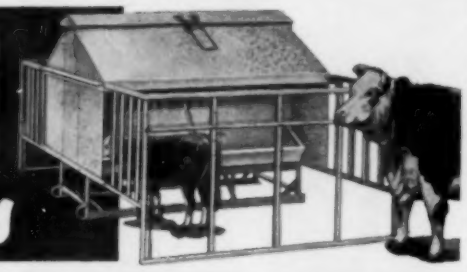
MULTIWALL BAG DIVISION

WEST VIRGINIA PULP AND PAPER COMPANY

230 Park Avenue, New York 17, N. Y.

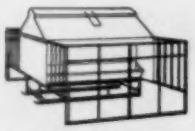
PLANTS: TORRANCE, CALIF. • ST. LOUIS, MO. • NEW ORLEANS, LA. • MOBILE, ALA. • WELLSBURG, W. VA.

BROWER CREEP FEEDER FOR *Calves*



CAPITALIZE ON THE TIME-AND-WORK SAVING FEATURES . . . THE INCREASED PROFITS YOUR CUSTOMERS CAN MAKE!

Here's the product that spells p-r-o-f-i-t-s for feed dealers! Farmers are interested in getting heavier, upgraded calves at weaning . . . better price . . . earlier marketing. Brower Calf Creep Feeder keeps cows out — saves feed. Its big capacity saves time and work. Weather tight — keeps feed dry in all weather. Anchors solidly at all 4 corners — stays put. Sturdy angle iron stalls fold to top for easy towing on steel skids. Hopper and trough of heavy, rust-resisting Armco Zincgrip. Shipped knocked down to save freight; easy to assemble.



NOW AVAILABLE IN 2 SIZES! Double stall creep feeder (above) holds 20 bushels, takes care of 40 calves; single stall creep feeder (below) holds 12 bushels, takes care of 20 calves.

BROWER *Pig Creep Feeder*

Hog farmers are fine prospects for Brower's Pig Creep Feeder — in earlier gains, earlier weaning and healthier pigs. Keeps sow out of pig's feed — gives pigs a head start at weaning. Feeder is weatherproof, sanitary, easily moved. Sturdily built — body of heavy, rust-resisting Armco Zincgrip. Holds 8 bu. feed; capacity 75 pigs.

• WRITE FOR FREE CATALOG SHOWING OUR COMPLETE LINE OF POULTRY AND LIVESTOCK EQUIPMENT.

BROWER MANUFACTURING CO., 588 N. 3rd, Quincy, Ill.

158

Grain Driers, Too, Become Obsolete!

This automobile was tops in transportation. An improvement over the horse and buggy, it was the best available. Today's automobile makes this model impractical.

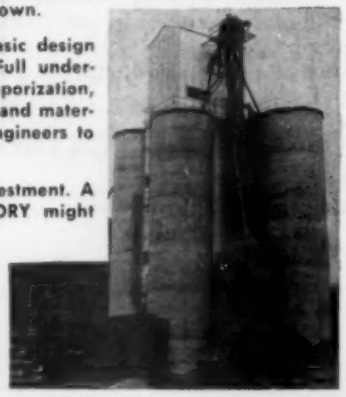
Aeroglide®

Makes Older Driers Obsolete!

A grain drier 10 years old is probably outmoded. Engineering improvements enable an Aeroglide drier to give more capacity, more uniform results with less fuel and oftentimes at lower initial cost. Savings resulting in operation of a modern grain drier make an out-of-date unit expensive to own.

AEROGLIDE driers incorporate basic design concepts that obsolete older driers. Full understanding of ambient temperatures, vaporization, optimum air speeds, heat transfer rate and material agitation has enabled Aeroglide engineers to design a truly superior grain drier.

A grain drier is a significant investment. A letter requesting the AEROGLIDE STORY might be your most profitable action today!



A NEW 23-page illustrated booklet tells the AEROGLIDE STORY. Sent on request without obligation. Write, wire, or phone now.

® Reg. U. S. Pat. Off.

Aeroglide Corporation

Phone TEmple 2-6422 - Cable: AEROGLIDE
510 Glenwood Ave. - Raleigh, North Carolina

GAS, OIL AND LP GAS FIRED GRAIN DRIERS WITH 200 TO 1,000 BU. PER HR. CAPACITY FOR DRY ING CORN, SOYBEANS, RICE, WHEAT, BARLEY, MILO, LUPINE, BUCKWHEAT, PEANUTS, COFFEE, ETC.

FEED MILL BATCH PROPORTIONING

By R. H. Schonfisch
Richardson Scale Co.

EDITOR'S NOTE: In the accompanying article, Mr. Schonfisch, regional manager for the Richardson Scale Co. at San Francisco, discusses the general subject of batch proportioning, with special attention to automatic control systems. The article is adapted from a talk made by Mr. Schonfisch at the Feed Mill Production School sponsored by the Washington State Feed Assn.

Feed millers have always been confronted with the problem of proportioning and mixing ingredients accurately. In the past, equipment employed to do this job has ranged from dumping pre-weighed sacks of material to a batch mixer on up to automatic volumetric and continuous weighing systems which utilize continuous mixers.

Modern batch weighing and mixing arrangements provide accuracy and flexibility. The batching approach can be followed by using many variations of manually controlled weighing units or automatic weighing machines which allow for pre-selection of ingredients and cycle repetition without added effort on the operator's part. In this paper, I am discussing design and operation of components common to all batch proportioning systems, in addition to pointing out automatic control systems.

FIGURE 1. This photo shows the flow of free-running material from a bin with two sloping sides.

All batch proportioning systems require: Ingredient storage bins, feeder or cut-off devices to control the flow of each material to the weighing system, a weigh hopper of suitable design, and, finally, a batch mixer. If an arrangement is not completely pneumatic or manually operated, there will also be need for some type of interlocked electrical control panel.

Ingredient Bins: While many bins are a product of required capacity and space available, a proportioning system requires an even flow of materials if accurate results are to be expected. The trick is to design within the space limitations bins which will guarantee consistent material flow. All bins are not the same, since the governing factor is the material accommodated.

Studies conducted by our development department have shown how various materials flow from bins. For example Figure 1 shows a free-running material as it flows from a bin with two sloping sides.

Flow takes place only in a column directly above the opening of a bin. Assuming the bin slopes are steeper than the angle of repose of the material to be accommodated, it will empty completely. However, material on both sides of the center column would remain static if a constant supply were being added to the central area.

Research also has been conducted with less free flowing material. The center column is discharged, and material above the sloped portion remains static.

Experiments with bins indicate that maximum material pressure is at the point of transition. Any one of a hundred methods can be used to

FIGURE 2. A Richardson control panel with punched card reader, for controlling and feeding 16 materials.

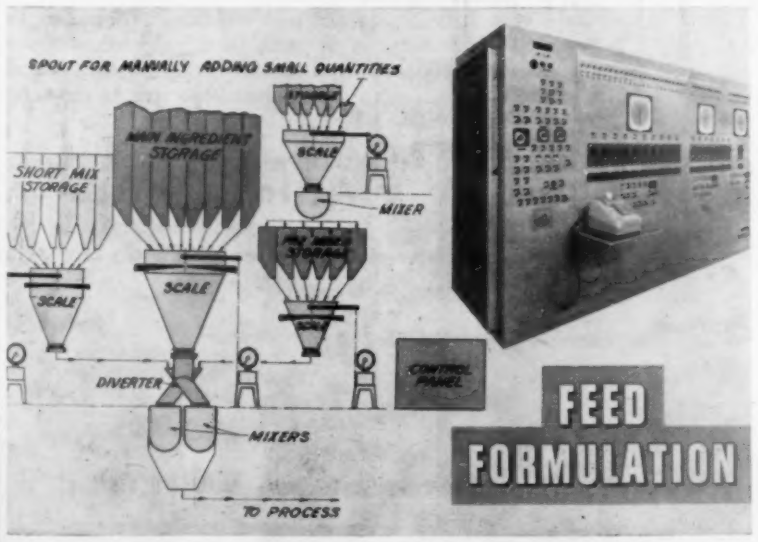


FIGURE 3. This illustrates a control panel and simplified flow chart for a feed mill.

IT'S SURE TO BE HERE EVERY WEEK OF THE YEAR

Solulac production is not just a seasonal thing. You can formulate your feeds with it and be sure of a supply every week in the year. Solulac is your steady source of high nutritional values . . . unidentified growth factors...vitamins. Guaranteed to be free flowing. And it's yours, whenever you need it, in 50 and 100 pound bags or bulk carloads. Write, wire or phone. Grain Processing Corporation is also your continuous source of corn distillers dried grains.

Copyright 1958

GRAIN PROCESSING CORPORATION

MUSCATINE, IOWA • Telephone AMherst 3-1321 TWX 495

Primary Fermentation Products

Riboflavin — Vitamin B-12 — Bacitracin — GP-101, source of whey and other unidentified growth factors.

widen the flow area without changing the bin. However, a bin having a larger opening and proper slopes greatly improves flow.

There are three important points which should be remembered in connection with bin design:

1. Bin slopes should be steep enough and arranged in a manner which will allow for complete discharge.

2. The area of maximum material pressure is where the straight and sloped portions of the bin are joined.

3. Bin openings must be of sufficient size so that material will readily shear from itself within the bin.

Material Feeders and Cut-Off Devices: Depending on the type of system under consideration and the materials involved, anything from a hand or pneumatic slide on up to special screw feeders will be employed to deliver ingredients to the weigh hopper and provide precise cut-off. While some systems use cut-off slides, it is our observation that only the very free-flowing materials, such as grains, small pellets and crumbles, can be handled with true efficiency in such a manner. Surging and irregular flow caused by material cascading down the static areas of a bin necessitate a feeder which can draw evenly and control momentary flow pressures. For either manual push-button systems or automatic control arrangements, the screw feeder is preferred where ground materials are handled.

Feeders which we use in this category have a variable pitch flight. It serves to draw materials evenly all across the bin opening and not from just one end as a standard flight would do. A flush box is normally used to reduce bin pressures where extremely fine materials are accommodated.

At the discharge end of the tube-type feeder, the screw is double flighted to even out flow by making smaller and more frequent pulses. Feeders, depending upon length, can be designed with or without brake drives. However, when irregular coast is expected, the brake is a worthwhile addition.

Weigh Hopper: The weigh hopper must incorporate good bin design for positive discharge. Inlet opening generally is determined by the number of feeders to be accommodated. Capacity should be determined so that no ingredient, when used in maximum quantity, is able to ground out or touch stationary members of the weighing system.

Both radial and slide discharge gates are used on weigh hoppers. Hoppers are dust enclosed and pneumatically operated components are equipped with limit switches to provide positive indication for proper interlocking purposes.

Control System: Whether the proportioning system utilizes hand slides, air gates or feeders, the controls should be located within easy viewing distance of the weighing arrangement's dial head. Automatic controls can be positioned wherever convenient to general mill operations by use of a remote dial indicator. Electrical panels provide means for controlling all feeders or cut-off devices, hopper discharge, mixer discharge, mixer time selection, and material routing. Automatic panels perform the same basic functions; however, weights are preselected and duplicate batches are automatically handled.

Color coding can be used for easy orientation. Automatic recording can be provided to print and identify all materials handled.

Figure 2 provides just one example of a control panel. This is a Richardson control panel with punched card reader, for controlling and feeding 16 materials.

A batch proportioning system operates on a cumulative basis, and weight selector dials are set accordingly. Each dial is assigned to a given material or feeder. Quantities are set as desired, and materials selected will be according to formula requirements.

Compensation knobs are used for adjustment of cut-off impulse to account for material in the air and cut-off lag. They are necessary if quick visual inspection of the panel is to provide weight selector readings in direct relation to actual requirements.

Assuming a batch is properly set, a system can be placed on automatic, and materials are cumulatively added and held until called for by the mixer impulse. Timer and mixer interlocks are normally included as part of the basic control arrangement. Automatic accuracy checking is possible, and each weight is checked to whatever tolerance is acceptable for production standards (compensation). Manual controls are incorporated for single batches.

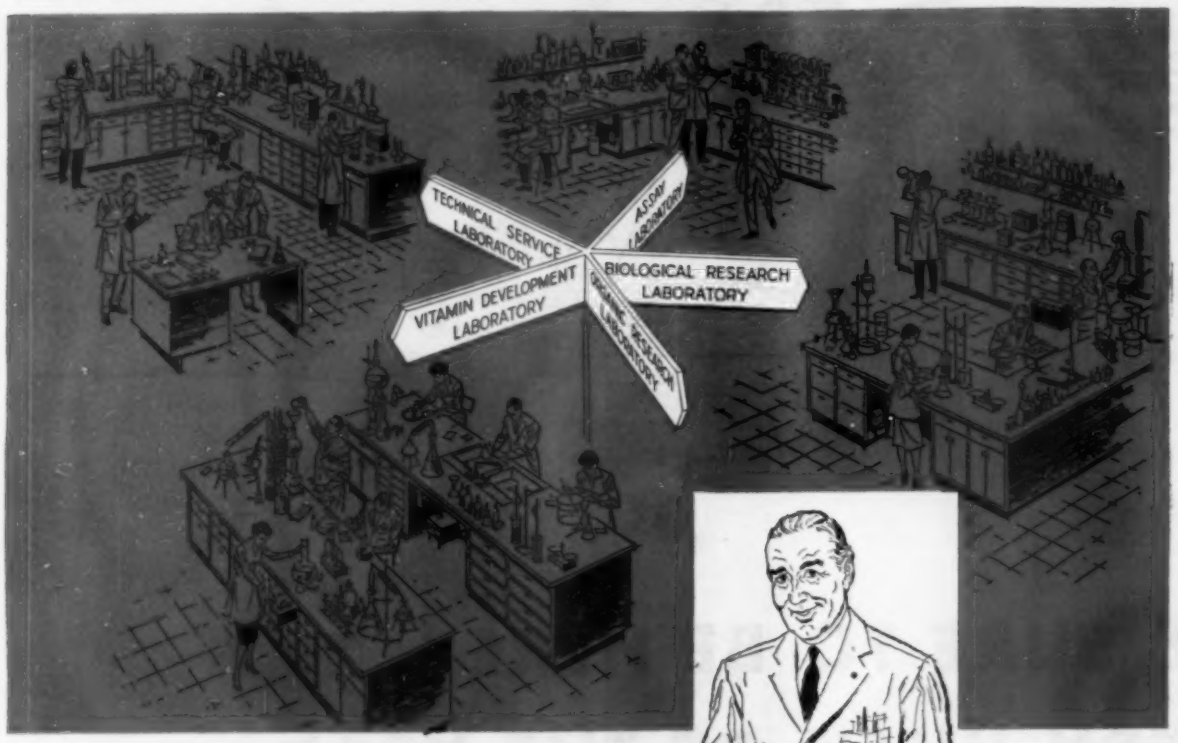
Pacific Coast Firms To Exchange Stock

PORTLAND, ORE. — Merger of Ames Harris Neville Co., pioneer bag manufacturers of the Pacific Coast, and the Boise Cascade Corporation, Boise, Idaho, is expected to be consummated shortly, according to a joint announcement of the two firms. Stock of the bag company will be acquired by Boise Cascade through an exchange of common shares.

An offer of Boise Cascade to the shareholders of Ames Harris Neville will be made after approval of terms and conditions by the Securities Exchange Commission. The exchange of stock will require acceptance by shareholders of the bag company at a meeting Sept. 2.

Ames Harris Neville Co. started operations as a bag manufacturer in 1878. It has plants in Berkley, San Francisco and Glendale, Cal., and in Portland.

Boise Cascade Corp. manufactures and distributes forest products and building materials throughout the Pacific Northwest.



May we help you?

This may be a good time to remind you that Nopco-Paks are custom-formulated and custom-blended individually for you.

Nopco-Paks are skillfully blended high-quality ingredients including the superior Micratized® Vitamins A and D, formulated to your specifications.

Nopco-Paks are formulated by qualified nutritionists in Nopco's Technical Service Bureau. The bureau's efforts are actively supported by Nopco's Technical Service Laboratory, Vitamin Development Laboratory, Biological Research Laboratory, Organic Research Laboratory, and Assay Laboratory.

With this accumulation of nutritional know-how behind us, we do not have to make exaggerated claims for Nopco-Paks. Rather, we prefer to say: "May we help you work toward the ideal premixes for you—nutritionally and economically?"

Discuss the whole matter with your Nopco representative or write us direct.

Visit us at Booth 12
World Poultry Congress, Mexico City
September 21-28, 1958

NOPCO®

NOPCO CHEMICAL COMPANY
General Offices: 60 Park Place, Newark 1, N.J.
Plants: Harrison, N.J. • Peoria, Ill. • Richmond, Calif.
Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

NOPCO-PAK®

More profit on feed when you mix your own brand!

BROWER *Whirlwind* **FEED MIXER**

Earn up to $1.50 profit per bag by mixing your own brand of feed with the BROWER MIXER . . . the extra profits soon pay for it! WHIRLS the ingredients instead of just tumbling them . . . mixes a perfect blend in about 10 minutes . . . fast, economical! Built for years of trouble-free service. Five sizes. World's Largest Selling Mixer!

BROWER MFG. CO., 566 N. Third St., Quincy, Ill.

Write for FREE CATALOG

The Golden KEY

to Better Poultry Feeds!

XANTHOPHYLLS . . . the mysterious yellow-orange pigments found in alfalfa meal . . . give broilers the golden look that buyers demand, and supply eggs with appetizing butter-yellow yolks. "In my opinion," says Dr. J. R. Couch of Texas A. & M., "the xanthophylls in alfalfa are worth four times the cost of the alfalfa used in a ton of feed, even at the 5% level."

Key Dehydrators protect the natural xanthophyll content of alfalfa meal with inert gas storage. Xanthophylls, much like carotene in molecular structure, are easily lost through oxidation, just as carotene is lost. Key Dehydrators prevent oxidation by blanketing stored alfalfa with a protective covering of inert gas under pressure.

Key Dehydrators have all the facilities for gas storage. Moreover, Key Dehydrators offer you personal supervision of each step of production . . . personal responsibility for each shipment of meal. Each Key Dehydrator is an independent business man, staking his reputation and his success upon the quality of his product . . . helping to maintain a free and open market for feed ingredients. Make sure your next shipment of dehydrated alfalfa meal comes from a Key Dehydrator!

KEY

Alfalfa Dehydrators

Gas Storage LOCKS IN the Nutrients!

Al-Fa Meal Co.
Columbus, Nebraska

Beermann Bros. Dehy
Dakota City, Nebraska

Dehy Alfalfa Mills, Inc.
Fremont, Nebraska

F. J. Higgins Milling Co.
Schuyler, Nebraska

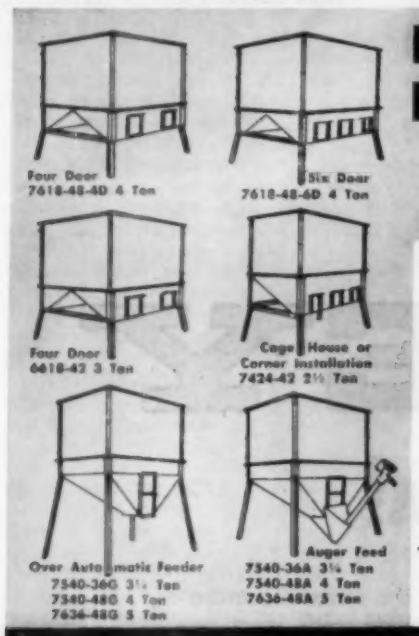
Iowa Valley Alfalfa Mills
Iowa City, Iowa

Prairie Dehydrating Co.
Roanoke, Illinois

Progress Products Co., Inc.
Overton, Nebraska

Trico Feed Mills
Minden, Nebraska

Wraybill Dehydrating Co.
Sloan, Iowa



BUILT TO LAST

Lemanco **INSIDE BULK FEED BINS**

Economical per ton storage, plus convenience . . . that's the answer to the popularity of LEMANCO all-steel bins for poultry houses and other types of bulk feeding operations.

Bases—all welded 14 gauge steel; sides—16 gauge galvanized steel; legs—¼" angles. Specially formed corners for extra reinforcement.

Make your investment pay over the long haul. Write today for further information.

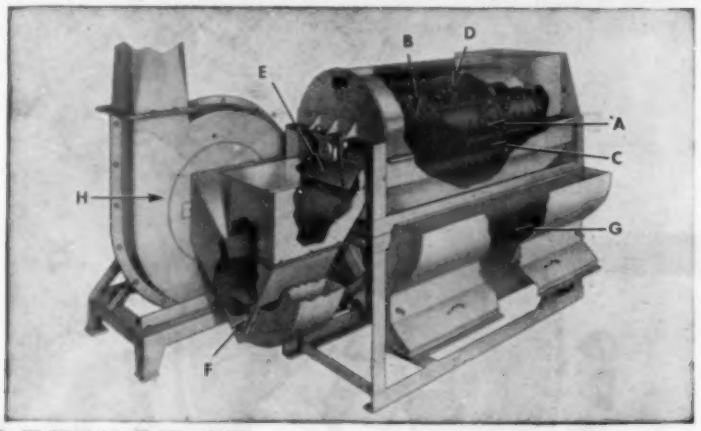
LEACH MANUFACTURING CO.

P. O. Box 215 · Alabama City Station · GADSDEN, ALABAMA · Telephone Liberty 7-5472

FEEDSTUFFS

LEADER IN THE FIELD

EVERY FUNCTION CAREFULLY ENGINEERED to provide the most compact, dependable and efficient corn shelling ever available



TRIUMPH No. 1200* Corn Shellers

with shelled corn cleaning attachment and cob blower

Designed Expressly for Grain and Terminal Elevators

The unique principles developed by TRIUMPH Engineers for the TRIUMPH No. 1200 Corn Sheller have produced superior performance and high shelling rates in the high moisture corn areas of the East, and the Southern Snapped Corn Areas of the South as well as the machined picked corn areas of the Corn Belt. That these principles have produced outstanding results is demonstrated by the wide acceptance and popularity of the TRIUMPH No. 1200 Corn Shelling System by commercial corn handling plants in the very areas where corn shelling problems were the most troublesome in the past.

Along with the development of better corn shellers, TRIUMPH Engineers and Distributors have helped solve many problems relating to handling and shelling ear corn from the dump pit to the cob bin.

The valuable experience of TRIUMPH in this specialized field is a plus value gained only in buying TRIUMPH.

Check these new patented principles of sheller design developed by TRIUMPH Engineers:

A—Rugged Shelling Cylinder—improved design—carefully engineered for maximum agitation assuring thorough shelling and separation. B—Every inch of area around the shelling cylinder is actively used to screen out shelled corn. C—Area between shelling cylinder and screen enlarged to provide high shelling rates and allow foreign material to pass. D—Curved Comb Bars control rate of flow internally to assure full separation. E—Automatic control of discharge rate. F—Pneumatic trap for foreign material. G—"Push-Pull" cleaning thoroughly controls aspiration of shelled corn. H—Separately powered, high capacity cob blower with flexible positioning engineered into the shelling system.

*Pat No. 2,754,827 Other Pats. Pending

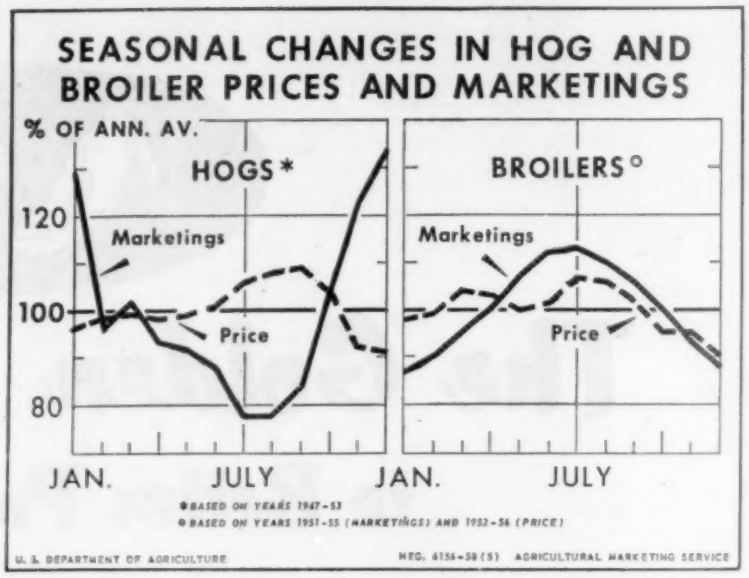
TRIUMPH

CORN SHELLERS

THE C. O. BARTLETT & SNOW CO.

6249 HARVARD AVENUE • CLEVELAND 5, OHIO

GET FULL DETAILS. *Write for the catalog today!*



Hog, Broiler Price Patterns Compared

WASHINGTON—Generally speaking, when supplies of agricultural commodities are heaviest, prices are lowest. This well known pattern applies to hogs, eggs, cattle, wheat, corn and most commodities. However, broilers and turkeys do not follow such a pattern.

Although this difference among commodities is well known to many persons, the accompanying U.S. Department of Agriculture chart provides an interesting illustration of the difference between hogs and broilers.

Seasonally bunched births of pigs are reflected in seasonally bunched marketings, it was pointed out by Martin J. Gerra, USDA economist, and marketings are largest in November-January, with marketings declining sharply until July. Hog prices are lowest in November-December and highest in July-September as prices vary in inverse relationship with the quantity marketed.

Now, look at broilers. The peak in marketings usually occurs in July, but the average price is highest in the summer.

Mr. Gerra points out that monthly changes in demand for pork are relatively small, so when supplies increase, prices drop.

For broilers, however, warm weather seems to mean an increased demand as people look for easily prepared, less fatty foods. A smaller supply of red meat also boosts demand. On the other hand, demand for broilers declines sharply at Thanksgiving time when turkeys become the favorite source of poultry.

If the seasonal variation in broiler marketings increased as sharply as for hogs, the seasonal swings in demand would be offset so that the seasonal swing in price would probably level out.

However, this is not the case, and we have the situation of prices rising at the same time marketings rise. Of course, everything that goes up must come down, so the chart also is a reminder that broiler prices will be declining further and the recent heavy production cannot be maintained without price drops.

Hexestrol Boosts Gain Of Wintering Steers

COLUMBIA, MO.—In a recent University of Missouri feeding trial implants of hexestrol, a hormone-like substance, at 12- and 24-mg. levels increased the rate and economy of gains made by steer calves wintered on a corn silage, soybean meal and steamed bone meal-salt mixture.

According to Dr. A. J. Dyer, chairman of the animal husbandry department, the 24-mg. level was of more benefit than the 12-mg. level. Daily gains during the 107-day wintering period ranged from 1.8 lb. for steers in check lots, through 2 lb. at the 12-mg. level, to 2.2 lb. at the 24-mg. level.

Hexestrol also increased the returns from the ration—a ton of silage fed to the control lot produced 110 lb. of gain, steers getting a 12-mg. implant gained 114 lb., and the lot getting the 24 mg. of hexestrol made 126 lb. gain.

"Thus," Dr. Dyer noted, "hexestrol implants paid in this wintering trial."

"There was no benefit from implanting yearling cattle that grazed wheat pasture followed by a grass-lespedeza mixture. This is in accordance with other trials conducted by the Missouri Agricultural Experiment Station."

Dr. Dyer also pointed out that cattle full-fed grain on pasture benefited from a 36-mg. hexestrol implant. The increase in gain was .3 lb. gain daily—2.5 lb. gain in the treated lot as compared to 2.2 lb. for the control lot—and the increased efficiency amounted to nearly a half bushel of corn for every 100 lb. gain during the 114-day finishing period.

Carcasses from the hexestrol-implanted lot graded slightly higher than those from other lots.

"At present, the hormone-like material is not available to livestock feeders," Dr. Dyer said. "However, similar results can be expected from the use of stilbestrol, a feed additive now available commercially and widely used."

North Carolina College Cows Achieve Records

RALEIGH, N.C.—Feeding and management programs played an important role in recent milk production records set by cows at North Carolina State College, according to Dr. J. E. Legates, acting head of the dairy husbandry section at the college.

The 83-cow herd averaged 11,596 lb. milk and 472 lb. butterfat for the year ending June 30. An intensive effort had been made to breed high efficiency into the herd, the cows had quality roughage available at all times, Dr. Legates said. He pointed out that the college uses year-around silage feeding.

BURTONS HAVE SON

SOUTHPORT, CONN.—J. N. Burton, assistant advertising manager of the agricultural division, American Cyanamid Co., and his wife are the parents of a son, Scott Nichols Burton, born Aug. 8 at the Lenox Hill Hospital. The Burtons have one other child.

Members of PENB Commodity Advisory Committees Named

CHICAGO — The Poultry & Egg National Board has announced the membership of its four commodity advisory committees for the coming year. Directors representing the various commodities on the board are also members of these committees.

The committees are as follows:

Allied Industry Committee—Harry A. Grant, Boston, chairman; Ray Bates, Mt. Morris, Ill.; Paul L. Benbow, Ft. Atkinson, Wis.; T. M. Goldhaft, Vineland, N.J.; John R. Hargreaves, Federalsburg, Md.; Eugene C. Holcombe, New York; John P. Holton, Indianapolis; Gordon W. Johnson, Kansas City; Richard J. Karrasch, Chicago; James C. North, Minneapolis; R. W. Posegate, Chicago; Dr. John G. Salsbury, Charles City, Iowa; Clifford A. Scott, Rahway, N.J.; Paul W. Turner, Modesto, Cal.

Egg Advisory Committee—Thomas J. Harrold, chairman, Winterville, Ga.; Paul J. Davis, Douglasville, Ga.; Waldo Haldeman, Philadelphia; Dr. J. C. Huttar, Ithaca, N.Y.; M. A. Khoury, Chicago; A. C. Kimber, Niles, Cal.; W. J. Moore, Bryan, Texas; Russell Rathbone, Seattle; Ralph J. Thomas, Sycamore, Ill.; L. N. Thompson, San Leandro, Cal.; H. B. Wallace, Des Moines; James J. Warren, Jr., North Brockfield, Mass.; Seth Shaw, Washington.

Broiler Advisory Committee — Thomas T. Folger, chairman, Dahlonega, Ga.; Tom Arrendale, Clarkesville, Ga.; Byard V. Carmean, Laurel, Del.; William O. Fiscus, Morgan Hill, Cal.; Earl M. Garber, Timberville, Va.; C. E. McCauley, Seaford, Del.; Robert P. Martin, Ramsey, Ind.; Raymond N. Miller, Lancaster, Pa.; John Randolph, Hope, Ark.; Victor Ryckebosch, Lancaster, Cal.; Noel Shaver, Crawfordsville, Ind.; William P. Ayers, Chicago.

Turkey Advisory Committee—Howard Kauffman, chairman, Waterman, Ill.; Herbert Beyers, Salt Lake City; Peter Crafts, Grasmere, N. H.; Charles D. Hawks, Little Rock, Ark.; John W. Hough, Mount Morris, Ill.; Waldo C. Huffman, Newberry, S.C.; R. E. Janes, Austin, Texas; Trevor L. Jones, Springfield, Ill.; Robert M. McPherrin, Riverside, Cal.; Walter H. Schwedler, Portland, Ore.; M. C. Small, Mount Morris, Ill.; Morris G. Smith, Ellicott City, Md.; Carl C. Stout, Richland, Mo.; Ray Thompson, Ellsworth, Iowa; Clement Thurnbeck, Forest Lake, Minn.

The four committees met in Cleveland during the American Poultry & Hatchery Federation convention to provide counsel on PENB's finance and membership programs for the remainder of this year and for 1959.

TATE PEASE RECUPERATING

MEMPHIS, TENN.—Tate Pease, Jr., owner of S. T. Pease, Jr. & Co., brokerage firm, is recuperating at the Baptist Hospital in Memphis after undergoing minor surgery on his leg.

CHECKERBOARD GRAIN COMPANY

Buyers and Sellers of

MILLFEEDS, GRAINS AND GRAIN PRODUCTS

CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

SCROGGINS GRAIN CO.

Phone FE 5-3913 — Teletype: MP 344

WHOLE and GROUND GRAINS and SCREENINGS

MINNEAPOLIS, MINNESOTA

Egg Shell Quality *begins with* **EGGSHELL BRAND Oyster Shell**

Poultrymen are being told the EGGSHELL BRAND story in advertisements and point-of-purchase displays wherever EGGSHELL BRAND Oyster Shell is sold.

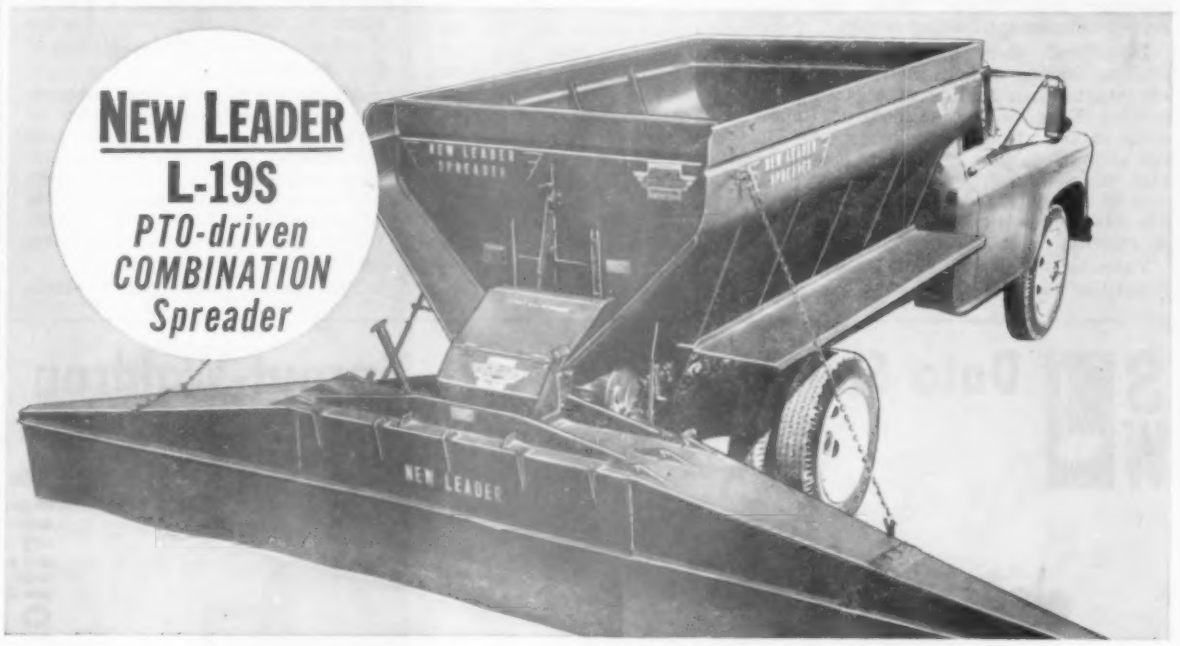
Take advantage of this complete promotional program. Sell the really digestible, soft reef shell that has become the standard of the industry.

EGGSHELL BRAND OYSTER SHELL

a product of

OYSTER SHELL CORPORATION

BALTIMORE, MARYLAND



Wide 24" Conveyor and Twin Spinners Deliver Fast, Uniform Spreads!

Simple operation saves time and upkeep: set feedgate opening . . . start truck engine . . . start spreading!

The L-19S hopper body is 6" higher and more heavily reinforced than other lime spreaders. This means bigger payloads, with less blowing and no body warp or twist. 45° angle side slopes help prevent bridging and permit a lower center of gravity, a more attractive appearance.

Typical of its quality construction are such exclusive features as: dust and moisture-sealed gears with Timken roller bearings, heavy-duty roller-type conveyor chain and an optional endgate that swings completely open for stock piling.

New Leader **Engine-driven** COMBINATION Spreaders are also available: Model L-22S with a 7.0 h.p. engine and Model L-32S with a 12.5 h.p. engine to deliver plenty of power for heavy applications of lime or fertilizer.

NEW LEADER Model L-14S LIME SPREADER

is a high quality rig with a low price tag!

Cut your in-the-field costs with this simple to operate, easy to maintain spreader. Merely set the feedgate opening, start the truck, engage the PTO and start spreading! Material is delivered to the twin spinners over a wide 24" conveyor. Also available with a center dump for stock piling.

New Leader **Engine-driven** lime spreaders: Model L-52S has a 24" conveyor and is built for heavy-duty use. Model L-62S with a 30" conveyor is available for widespread applications. Both spreaders can also be used for fertilizer.

NEW LEADER L-42S Mobile Blender Accurately Blends and Spreads 3 Fertilizers At the Same Time!

Permits the operator to control both the amount of spread and ratio of 3 fertilizers depending on varying soil conditions! A 7 h.p. engine drives the twin spinners at a constant rate. A 36" belt-over-chain conveyor is powered from a driveshaft drive and synchronized to truck speed.

Ask Your Nearest NEW LEADER Distributor for a Demonstration!

ALA., Birmingham and Prichard—G. C. Phillips Tractor Co.
ARK., Ft. Smith and Springdale—Truck Equip. Co.
Little Rock and Eldorado—Southern Equip. Co.
COLO., Denver—Madron Mfg. Co.
DEL., Harrington—Bohr Spreader Service, Inc.
FLA., Lakeland—Henry W. Conibear
GA., Atlanta—Brooker Truck Equip. Co.
ILL., Peoria—Truck Equip. Co.
Rockford—D. H. Thomas & Son, Inc.
IND., Elkhart—Emmert Trailer Corp.
Indianapolis—South Side Equip. Co.
Tell City—Mulzer Bros.
IOWA, Cedar Rapids—Wendler-Kraus Equip. Co., Inc.
Sheldon—Snyder-Meylor Co.
Omaha, Neb.—Badger Body Mfg. Co.
KANS., Wichita—Perfection Truck Equip.
MICH., Saginaw—Goss Seed & Equip. Co.
MISS., Jackson—A. P. Lindsey, Distributor
MO., Robertson—Koste Machinery Co., Inc.
Kansas City—Perfection Spring & Equip.
NEB., Lincoln—Agrifirst Chemical Co.
NEV., Lovelock—Lovelock Welding
N.Y., North Collins—Schmitz Sales & Serv.
New York City, Poughkeepsie and Westbury, L.I.—H. O. Penn Mach. Co.
N.C., Raleigh—G. H. Stanard
OHIO, Columbus—Schodorf Truck Body & Equip.
Damascus—D. L. Phillips
Orrville—Orran Hofstetter
Toledo—Riedy-Manner Truck Equip. Corp.
PA., Annville—Annville Body Co.
Waynesburg—Ira D. Haines
TENN., Donelson—Tennessee Distrib. Co.
UTAH, Murray—Oscar Bennion
W. VA., Buckhannon—Farmers' Truck & Impl. Co.
WIS., Rice Lake—Ostrom-Johnson Co.
Sun Prairie—Brooks Industrial Sales
CANADA, New Brunswick, Fredericton—Tractors & Equip., Ltd.
Ontario, Ottawa and Toronto—General Supply Co. of Canada
Quebec, Montreal—General Supply Co. of Canada

Write for illustrated bulletin.

HIGHWAY EQUIPMENT COMPANY

623 D. Ave. N. W. Cedar Rapids, Iowa

Our Business Is S-P-R-E-A-D-I-N-G-!

• New Management! • New Distribution!
• New Nationwide Service!

. . . means more profit for you!

Swine Feeding Work Outlined

FAYETTEVILLE, ARK. — A discussion of pig parlors and a report on swine nutrition research at the Arkansas Experiment Station were among the highlights of this year's Swine Study Day at the University of Arkansas.

Wade McMillan, Ralston Purina Co., St. Louis, and Lee Tyler, swine producer from Stigler, Okla., discussed confinement feeding of pigs.

In general, these men said that confined feeding of hogs offers more advantages than feeding of pigs on pasture. They noted that more adequate rations are necessary, but that the savings on costs of fencing, pasture and watering facilities and the ease of supplying feed in pig parlors are advantages over feeding of pigs on pasture.

Talks on breeding by Prof. Paul R. Noland of the University of Arkansas and Dr. W. A. Craft of the Regional Swine Breeding Laboratory, USDA, Ames, Iowa, were another feature of the program.

Dr. K. W. Scott told of swine nutrition research at Arkansas. Following is a summary of his remarks:

Gossypol Toxicity: The toxic substance gossypol makes hazardous the feeding of cottonseed meal to swine. Arkansas work shows that the kidneys and intestinal tract are damaged by this substance. These studies increase the knowledge of the mechanism of action of gossypol and will allow a solution to be found sooner.

Hormones for Swine: Use of the male hormone testosterone has been tested because it can be observed that intact males (boars) are more lean than barrows. Intact males, castrate males, intact females and castrate females were fed methyl testosterone at various levels. Rate of gain of females was slightly depressed by .15 mg. of testosterone but gains of males were not affected. Pigs fed the methyl testosterone produced somewhat leaner carcasses than the control animals. Spermatogenesis was markedly depressed in boars fed the highest level of hormone (1.5 mg. per kilogram body weight per day). Interstitial tissue development was depressed in all treated groups.

Levels of the hormone fed were not effective in inducing a growth stimulus, though they were effective in producing pronounced alteration of gonadal activity.

Antibiotics, Furans and Unidentified Factors: Effective antibiotics increase growth rate and improve feed efficiency in most instances. Antibiotics are apparently of little value in extremely sanitary conditions, but few animals are maintained in an artificial environment so antibiotics are useful.

The furans compounds (furazolidone, nitrofurazone and nitrofurantoin) are active against a wide spectrum of bacteria, and have been effective in combatting specific bacterial infections. However, this station and other workers have failed to get a constant response. The general recommendation is to use these compounds for specific disease treatment and not as a general feed additive. More work will be required to substantiate findings which indicate they can be used to promote growth generally. However, furazolidone in conjunction with Terramycin was effective in promoting growth in runt pigs.

Evidence was obtained in an experiment that fish solubles contained a growth factor for pigs. Yeast was found to promote growth in one trial but not in another. Fish meal as a source of unidentified factors has been tested at Arkansas with variable results.

Copper Feeding: English workers reported a growth response from copper equal to that effected by antibiotics. This prompted work at Arkansas. Aureomycin, copper and dried brewers yeast alone and in combinations were tested. Only Aureomycin significantly effected an increased rate of gain. Copper increased gain but not significantly. Slaughter data indicate effects of copper may be medicated through control of roundworms due to lack of liver scars and/or adult worms in the intestines. No toxic effects were noted at copper levels of 250 ppm.

Trace Minerals: Work at Arkansas has been variable. In one trial a response was obtained with addition of trace minerals; in another, there was no response. This may be expected to a certain degree because rations may vary in content of trace minerals and animals' requirement may be altered by maternal carryover. Work is needed on determining mineral requirement of pigs and on analytical techniques for ration analysis.

Amino Acid Supplementation: Reseach was conducted to find the type and amount of amino acids needed to be added to a cottonseed meal ration to enhance its protein quality. A corn-cottonseed meal basal diet was fed, supplemented with lysine, methionine and tryptophane. A significant growth response was obtained with dl-lysine. The optimum level of supplementary dl-lysine in the presence of fish solubles was .1%. Levels greater than .1% failed to support maximum growth. Addition of dl-tryptophane at levels used in these tests promoted growth significantly when added in presence of fish solubles. Addition of .05% dl-methionine did not result in a statistically significant growth response. Increases in growth rate were paralleled by better feed efficiency.

Calorie-Protein Ratio: Trials are under way to determine optimum C-P ratios for swine.

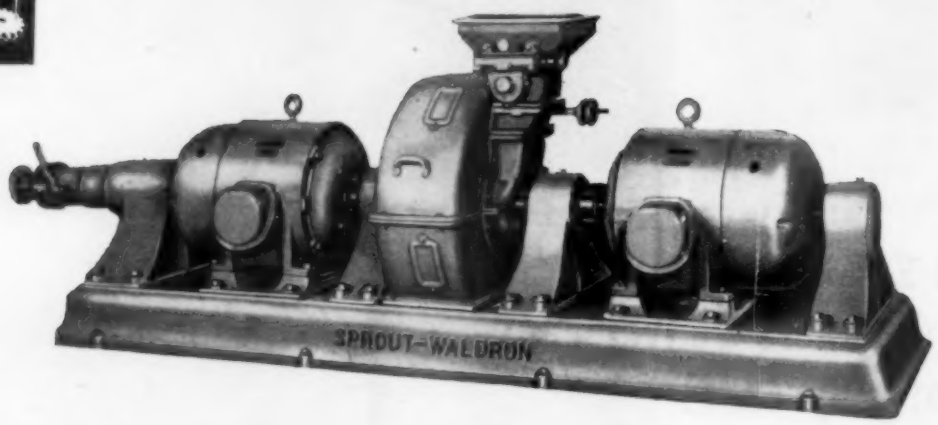
Parasite Damage: Research is under way on, among other things, effects of feed additives in eliminating or preventing parasites.

Housing and Wallows: Means of summer cooling were tested to determine effect of mud wallows compared

SW Data Sheet

Sprout-Waldron

Attrition Mills (Double Runner)



Sprout-Waldron Double Runner Attrition Mills operate on the time-proven size reduction principle of passing material between two discs revolving in opposite directions. Results depend on size, speed and design of discs, and the pressure exerted between them. Complete details on these mills are available in a 4-page Bulletin 144. Write for your copy today.

Years of service have shown these rugged units to be unequalled in output per horsepower . . . low maintenance costs . . . total tonnage per dollar . . . and ability to maintain high and uniform production rates, 16 to 24 hours a day year after year. Custom millers recognize these mills as the most economical and versatile feed grinders on the market.

construction details

Sprout-Waldron Double Runner Attrition Mills are built of cast iron and steel. Grinding plates can be of plain carbon, manganese, stainless steel, or non-ferrous and non-sparking alloys, depending upon the requirements.

The scientific design of these mills assures a steady flow of material between the revolving discs. Careful machining and balancing insures vibration-free operation and maximum capacity.

specifications

Disc Size	Length (All dimensions in inches)	Width	Height	Weight in Lbs.*
20"	72⅜	26½	33¼	2500
22"	81	26½	36¼	3150
24"	81	26½	36¼	3800
26"	95¾	32⅜	41	5500
30"	95⅜	39¾	48¼	6300
32"	95⅜	39¾	48¼	6300
36"	116	48	54½	12780

*Weights are approximate and are dependent upon horsepower of motors.

A seal ring and dust collar prevent unground material from by-passing the mill plates. Renewable, inexpensive wear plates protect runner arms against abrasion and accelerate feed flow into the grinding chamber.

Anti-friction bearings are used throughout. Bearing pedestals and shells are accurately machined for perfect interchangeability and also to maintain precise alignment. The streamlined, heavy mill shell has been designed for full capacity production. Grinding plates are available in a wide range of styles and can be quickly and easily replaced. A quick-release hand lever throws runners out of grinding position with one motion.

FD/109

SPROUT-WALDRON

The Best in Processing Equipment Since 1866

MUNCY, PENNSYLVANIA, U.S.A.

Modern equipment for—size reduction • mixing and blending • bulk handling equipment • size classification • pelleting and cubing

SW

FOR THE BEST IN ROLLER MILLS

SPROUT-WALDRON

MUNCY, PENNA.

with sanitary concrete wallows. Pigs in shaded wallows consumed more feed, grew more rapidly and required less feed per pound of gain than did animals in an open wallow or those with only shade. Recommendations are to provide a source of water for wallowing purposes, not a mudhole, in order to produce market hogs during summer months in Arkansas.

Protein Levels: Research was conducted to reevaluate old protein level recommendations in light of present knowledge. In one test, 10% protein, properly supplemented, was as efficient as 14%. In another test, comparing 8 and 10%, it was found that even with supplementation, growth was inadequate at 8% protein, with the 10% level adequate. In a third trial, testing 10, 15 and 20%, the 10% level again was adequate.

Drylot vs. Pasture: The contribution of pasture to a complete ration self-fed was tested. Results showed a slower growth rate on pasture with no increase in feed efficiency.

Creep Rations: Research is under way at Arkansas to test some common and economical sources of carbohydrate. Brewers rice was the first ingredient tested. It was formulated into a balanced ration, pelleted and compared with a balanced corn-creep ration. The pelleted rice creep ration was not so palatable. Work is continuing.

Level of Feeding on Pasture: Three lots of pigs were placed on oat pasture and were full-fed, 75% fed and 90% fed. The pigs on limited feeding required more feed per cwt. of gain and had a lower average daily gain than the self-fed group. It would seem that swine cannot utilize sizeable quantities of pasture to replace the concentrate ration.

B-Vitamins for Gestation: Research attempted to determine if the gestating-lactating sow would benefit from supplementation of vitamin B_{12} to the normal corn-soybean basal containing 10% alfalfa. Lot 1 received the basal; lot 2, basal plus 5 micrograms of B_{12} per pound of feed; lot 3, basal plus 44 micrograms of B_{12}. Figures on per cent of pigs weaned were, respectively, 66.2, 76.9, 77.4. Average weights of pigs at weaning were 30.5, 31.6, 30.0. Percent of pigs born live that were weaned: 75, 84.8, 82.8.

Pelleting: Recent data indicate pelleting may benefit one ration and not another depending on the principal grain component. Grains high in fiber have shown a decided benefit from pelleting. Pelleting is reported to decrease wastage and prevent selective consumption. However, the reported advantages are offset by additional cost. Experimentation at the Arkansas station is not in complete agreement with data from other stations.

High-Fiber Rations for Bred Stock: Use of high-fiber substances as a diluent for limiting energy intake promises to be a logical solution to self-feeding bred stock. Investigations are under way on this.

Shipping Fever Study

BERKELEY, CAL.—Two grants totaling $1,525.50 have been made to support a study on combatting shipping fever suffered by sheep at the University of California Davis campus. Chas. Pfizer & Co., Inc., gave $1,500, and the balance was the result of a collection taken from several anonymous donors.

VITAMINS
PRECISION BUILT FOR PRECISION NEEDS
VITINC VITAMINS, INC.
BASIC MATERIAL MANUFACTURERS and HEADQUARTERS FOR TECHNICAL INFORMATION
Write or Wire Your Requirements
VITAMINS, INC.
909 W. 58th Street, Chicago 21, Ill.

Refrigerated Ship, Bin Added by Haynie

WILDWOOD, N.J.—Haynie Menhaden Products, Inc., Wildwood, has announced the installation of a refrigerated holding bin on its docks and the addition of a new refrigerated fishing vessel to its fleet.

The 136-ft., 200-ton capacity vessel, equipped with chilling apparatus, has joined the Gulf division of the firm. The division operates from the Haynie plant at Moss Point, Miss., the Mississippi Menhaden Products, Inc.

Edward T. Casey, vice president, made the announcement. He said the refrigerated holding bin is the first in the industry. The installation, coupled with refrigerated vessels, will allow each menhaden catch to be transported from the waters to the actual processing machinery without chance of deterioration of quality, he said.

"Part of Haynie's expanding program of quality control, the unique bins are capable of taking on the entire menhaden cargo of the refrigerated fleet, which is unloaded automatically through large suction tubes," Mr. Casey said. "Even during the unloading operation, the menhaden are kept in a refrigerated condition—the first such unloading method in the industry."

New Swine Disease Reported in Ontario

GUELPH, ONT.—A new disease affecting little pigs is appearing in some Ontario swine herds, according to authorities at the Ontario Veterinary College here.

The disease, which has been referred to as "vomiting disease of little pigs," is somewhat similar to transmissible gastroenteritis. Affected are suckling pigs of two to six weeks of age.

Vomiting is usually the first symptom noticed, the authorities said. The pigs lose all interest in their feed, and it is reported that so far nothing has been found that will stimulate their appetites. They become very unthrifty and eventually die.

In transmissible gastroenteritis, the pigs become acutely sick and die quickly, usually in the first few weeks of life.

The authorities could not recommend preventive measures other than proper sanitary practices to avoid spreading the disease in the herd.

From the Desk of
DONN D. EARLY

Prepare ad for Aug 23 Feedstuffs to remind all dealers that only Tuxedos has both Taste-Tested and Extra-Production laying feeds!

No other feeds offer both these advantages to feeders!

THE EARLY & DANIEL CO.
CINCINNATI, O. SUMTER, S.C. TAMPA, FLA.
TUXEDO FEEDS
FOR LIVESTOCK AND POULTRY
Our 77th Year

BUY and SELL through WANT ADS

MODERN FEED PLANTS
By IBBERSON
GOLDEN SUN MILLING CO.
ESTHERVILLE, IOWA
T. E. IBBERSON COMPANY
ENGINEERS & CONTRACTORS Since 1881
Minneapolis, Minnesota

☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies.

Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.

MACHINERY FOR SALE

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, guaranteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

PNEUMATIC "AIR-CONVEYOR" SYSTEMS —Positive pressure blowers, new or used. Any size, capacity, distance or product. Nolder Co., Box 14, Corona Del Mar, Cal.

MINNEAPOLIS BAG SEWING MACHINE, Model M100, factory rebuilt—$190. The Nelson Company, Inc., Oxford, Kansas.

REBUILT AND GUARANTEED STANDBY POWER PLANTS

5—3 KVA 110/220 V. Onan, gasoline driven, manual start, ea.	$220.00
4—5 KVA 110/220 V. Onan, gasoline driven, remote start, ea.	425.00
3—10 KVA 110/220 V. Hobart, gasoline driven, remote start, ea.	625.00
1—10 KVA 110/220 V. O'Keefe-Merrett, gasoline driven, remote start	625.00
1—15 KVA 120/208/60/3 O'Keefe-Merrett, gasoline driven, remote start	810.00

Water Cooled—Completely Rebuilt

Prices Subject to Change Without Notice
For Additional Information Write or Phone

THE LIMA ARMATURE WORKS, INC.
130 E. Pearl, Phone CA 2-4010, Lima, Ohio

MACHINERY FOR SALE

FOR SALE: HAVE KM30 200 LB. ELECtric Yale Lift truck. Wenger Mixer Manufacturing, Sabetha, Kansas.

DAVIS CRIMPER 12" BY 30" ROLLS. Good as new. Morton Feed Store, Kingman, Kansas.

PORTABLE ALFALFA HAY GRINDER, complete with auxiliary equipment. P.O. Box 85, Cozad, Nebraska.

1955 DAFFIN ON 6400 CHEV. A-1 CONDItion, $7200. R. M. Hinnen, R.R. No. 1, Eureka, Ill.

FOR SALE: FORDS PORTABLE FEED grinder with mixers. Have two exceptionally good used outfits. H. L. Myers, Route No. 3, Alliance, Ohio, Phone 7209.

BULK FEED DELIVERY UNIT, NEW, 2-ton capacity, 16½ ft. delivery height, for truck mounting, $696. Rittenhouse & Sons, Long Point, Ill.

BEHLEN GRAIN DRYER: USED 360 BU. dryer, $2,450; 500 bu., $3,500, new guarantee. Order now for big pre-season discount, lease plan and installation. Rittenhouse & Sons, Long Point, Ill.

BRAND NEW A-C GENERATORS

6 New 12KVA Windpower AC Generators, 1800 RPM, 220/60/3, suitable for belt driving—Each $450.00. Price Subject to Change Without Notice. For Additional Information Write or Phone

THE LIMA ARMATURE WORKS, INC.
130 E. Pearl, Phone CA 2-4010, Lima, Ohio

34 YEARS OF INTEGRITY

Buy With Confidence

Rebuilt and Guaranteed Motors

1—500 HP	3600 RPM	2300V, G.E. Dripproof $3950.00
1—200 HP	3600 RPM	440V, G.E. Dr. Pr. 1350.00
4—100 HP	3600 RPM	220/440V, West. Dr. Pr. each 950.00
1— 75 HP	3600 RPM	220/440V, Lima, TEFC 1200.00
1— 60 HP	1800 RPM	220/440V, Lima, Dr. Pr. 550.00
1— 60 HP	1800 RPM	220/440V, Howell, TEFC 630.00
1— 50 HP	1800 RPM	220/440V, Reliance, Dr. Pr. 470.00
1— 40 HP	3600 RPM	220/440V, ACEC Dripproof New 409.00
1— 30 HP	3600 RPM	220/440V, Howell, Open 135.00

Innumerable motors in smaller sizes than these listed at prices as low as 40% of new motors. Call on us for quotation on any motors you need.

THE LIMA ARMATURE WORKS, INC.
130 E. Pearl Phone CA 2-4010 Lima, Ohio

E. H. BEER & CO., INC.

Machinery Division **Baltimore 2, Md.** **Dickens 2-6606**

2—Fuller Airveyor Pneumatic Systems, large capacity using 14"x21"—6 bearing pressure. Heavy duty Root Connersville exhausters with 100 HP Explosion proof motors, complete with receivers, airlock, piping, etc. These units can be seen here in Baltimore, each	$12,500.00
4—Double Stands Monarch Roller Mills 9x24 style C, roll feeders, each	995.00
8—Double Stands Monarch Roller Mills 9x30 style C, roller feeders, each	1,095.00
The above roller mills in best condition, cast iron bases, wood feeders, collar oiling bearings, complete with belting.	
5—Stearns 12"x12" Magnetic Separators, 8 ov. 2.3 amp. with Drayer feeders size 548, complete with all electrical components, perfect condition, each	500.00
3—Richardson Auto Scales with agitators, counter, ½ HP explosion proof motor drive, 4 Bus. Capacity, each	750.00
1—Richardson Auto Scale with agitator, counter, ¼ HP explosion proof motor drive, 1 Bu. Capacity	500.00
2—Richardson Auto Receiving Scales, residue beam, counter, 8 bus. capacity. Best condition, each	1,250.00
3—Richardson Auto Soft feed scales 120 lb. cap., each	200.00
1—No. 7 S. Howes Eureka Separator, Buhler drive 2,000 bu. per hr., sieve cleaners, very good condition	995.00
Dust collector for above machine	250.00
1—No. 3 S. Howes Eureka Separator, Buhler drive 400 bus. cap. sieve cleaners, very good	585.00
Dust collector for above machine	250.00
8—Sprout Waldron No. 277 Perfect Circle Sifters with 6"x16" divided inlet rounded at each end. Clothed with 16 mesh phosphor bronze wire. Cap. 250 bus. Like new, each	500.00
1—No. 4 JB Hammer Mill, 20" screens. Direct connected 75 HP TEFC 220-440 Vol. 60 cycle, 3 phase motor. Perfect condition	1,750.00
1—Jacobson No. 17 Ajacs 16" Hammer Mill, no motor, very good	650.00
1—No. 308 S. Howes Eureka Horizontal Mixer 1500 lb. cap. bagging height frame. End bagger. Chain drive including charging elevator. No motor	550.00
1—No. 308 S. Howes Eureka Horizontal Mixer 1500 lb. cap. bagging height frame, end bagger, complete with 5 HP Gearhead motor TEFC. Chain drive. Like new	850.00
1—2 Ton Sprout Waldron Vertical feed mixer 7½ HP TEFC motor, V-belt drive. Good condition	550.00
1—Farquhar Mobile Belt Conveyor 26 ft. 3 HP 220/440 reversible motor, 14" belt with wood cleats. Like new	800.00
1—No. 4 Eureka Suspension Scourer, wheat or corn 4-500 bus. cap., used three months. Like new	500.00
1—Kelly Duplex 15½B corn cutter & grader, 3 screens, 7½ HP TE motor	375.00
1—Blue Streak Hammer Mill, 40 HP Explosion proof motor and starter. Like new	1,750.00
1—Prater corn & wheat cracker & grader, new blades & screens	200.00
1—Eureka double scourer 50-75 bus. Very good	160.00
1—Superior Scalper Separator, SA36, cap. 3-500 bu. All steel with 3HP TEFC motor. Like new	500.00
1—Vibrox Vibrator for barrels, boxes and bags. New	350.00
1—Sprout Waldron No. 38 grain cleaner. Good	500.00
2—36" Cyclone dust collectors. Good, each	100.00

VARIOUS SIZE SCREW CONVEYORS — ELEVATORS — PULLEYS — SHEAVES — MOTORS — SPEED REDUCERS — LINE SHAFTING — BELTING

MACHINERY FOR SALE

USED ELECTRIC OVERHEAD TRUCK lift—track 122" apart—2 H.P.—220 volt—3 phase master motor with automatic brake. Price $100. Harold R. Vogt, Box 103, Mountain Lake, Minn.

2 FIELD QUEEN CHOPPERS 7' CUT. Completely reconditioned and guaranteed. Will consider trade for California pellet mill. Northern Colorado Alfalfa Milling Company, LaSalle, Colorado.

FOR SALE: TON SIZE VERTICAL MIXER Blue Streak with 5 H.P. TEFC motor, good condition; in operation now. Available September 1. Good buy. Write or phone Mr. Cooper, A&O Grain Company, Argenta, Illinois.

FOR SALE: USED DIAMOND HULLER, double head Attrition mill—32 inch—two 40 H.P. 220 volt—3 phase motors, reversing switches—oil compensators—300 amp. ammeter—600 amp. entrance switch—extra runner head. All for $1,000. Harold R. Vogt, Box 103, Mountain Lake, Minn.

SITUATIONS WANTED

TRAFFIC MANAGER: 10 YEARS EXPERIence with large grain processor, also other business experience. Address Ad No. 4023, Feedstuffs, 612 Board of Trade Building, Kansas City 5, Mo.

EXPERIENCED FEED EXECUTIVE WITH proven business administrative background seeks management position. Successful record in sales, purchasing and production. College education. Address Ad No. 4005, Feedstuffs, Minneapolis 40, Minn.

COMMODITY BUYER - TRAFFIC MANager: Family man, age 31, six years college with M.B.A. in Business Administration, six years experience in mixed feed business, desires to take responsibility. West Coast preferred. Address Ad No. 4015, Feedstuffs, Minneapolis 40, Minn.

FEED ADVERTISING MANAGER WITH thorough knowledge of advertising production and management, sales promotion, sales training, public relations, budget control, etc. Prolific writer, fluent speaker. Background includes sales and sales management. Address Ad No. 3909, Feedstuffs, Minneapolis 40, Minn.

CONSTRUCTION OR PRODUCTION SUperintendent with thirty years experience in feed and flour milling desires position with progressive company. Have supervised such projects as the installation of the Kansas State College Feed Technology mill. Can supply references of prominent persons in this field. Address Ad No. 4020, Feedstuffs, Minneapolis 40, Minn.

HELP WANTED

CHICK SALESMAN WANTED: 11-COUNTY territory in central Pa. Salary and commissions. Knowledge of poultry essential. Write Babcock Hatchery, R.D. No. 3, Lititz, Pa. Give full details in reply.

SALESMAN FOR DIRECT SALES AND service for feed manufacturer and allied lines. Ohio area. Full particulars first letter. Address Ad No. 4032, Feedstuffs, Minneapolis 40, Minn.

EXCELLENT SIDE-LINE OR FULL TIME item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 8, Mo.

HELP WANTED

WANTED — SALESMEN FOR FEED equipment company. Under 30 years. Agriculture background preferred. Address Ad No. 3931, Feedstuffs, Minneapolis 40, Minn.

FEED SUPPLEMENTS SALES REPREsentative: College training and knowledge of nutrition and formulation essential. Travel. Salary and commission, plus expenses. Location, Southern California. Contact R. G. Sanders, The Borden Company, 350 Madison Avenue, New York 17, N.Y.

FEED SALESMAN, 30 TO 40 YEARS OF age to live and sell in northeastern Nebraska territory. Good salary, car furnished; this is an old established independent feed manufacturer. Address Ad No. 4027, Feedstuffs, Minneapolis 40, Minn.

FEED SALESMAN WANTED FOR PROVen area—central Illinois—we have a man retiring and need a replacement. The territory is well established and company well known. Commission rate excellent—pay is superior—contact us now. Address Ad No. 3934, Feedstuffs, Minneapolis 40, Minn.

OLD ESTABLISHED SOUTH TEXAS FEED mill has opening for an aggressive feed salesman, experienced in dealing with and serving dairy and cattlemen, livestock and poultry raisers. Position is permanent for qualified man with good references. Address Ad No. 4033, Feedstuffs, Minneapolis 40, Minn.

TURKEY SPECIALIST

For sales service work with feeders, dealers and salesmen. Handles management and feeding problems, writes bulletins and speaks frequently before groups.

Must know turkey diseases, and have had practical experience in management and feeding. Live in Decatur, salary, expenses paid, company car, extensive travel.

TURKEY SERVICE MAN

Representative on Company financed turkey projects; counsels on continuing basis with large feeders on improvement of flock management, performs liaison functions between these accounts and home office.

Must be able to recognize turkey diseases and perform certain post-mortems. Michigan, Ohio, Indiana area. Please send complete resume to J. E. Schaberg

A. E. Staley Manufacturing Company
Decatur, Illinois

SALES REPRESENTATIVE

We are an old, established company selling an important ingredient to the feed trade, and we are looking for a top-notch man to represent us in Illinois, Indiana and a portion of Kentucky. The man we are looking for probably has had experience either buying or selling feed ingredients. He is ambitious and willing to work hard for a good future, and he will be expected to travel the territory continuously. Salary commensurate with experience and ability (no commission basis) plus travel expenses. Please submit resume, specifying when you will be available and salary desired. All replies confidential. Address Ad No. 4014, Feedstuffs, Minneapolis 40, Minn.

DISTRICT SALES OPPORTUNITY

Major basic manufacturer of vitamins and antibiotics needs a District Manager to sell to the feed industry in a midwestern territory. Unlimited opportunity for advancement for individual who can successfully represent us in this field. Excellent starting salary and unmatched company benefits. Straight salary and all expenses. Car furnished. Preferable age 35 or under. This opportunity will interest the individual who has long-term employment in mind. Address Ad No. 3995, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

UNUSUAL SALES EXECUTIVE OPPORTUNITY

Due to our recent acquisition of a feed plant in Lincoln, Nebraska, and having a Farm Buildings plant in Onawa, Iowa, we have a large expansion program for forward looking District Sales Managers for Nebraska, South Dakota and Kansas. Our exclusive dealer franchise program on Big "H" Feeds, Poultry and Livestock Equipment, Honegger Chix and Farm Buildings, is an outstanding business builder, unequaled in our industry.

We are interested only in salesmen who are interested in a growing income, that have the self-discipline to manage themselves and the ambition to work hard to attain this good income. If you have the sincere desire to make financial progress and to become a part of a fast-growing organization, write, wire or phone 640, Honeggers' & Co., Inc., Sales Department, Fairbury, Illinois.

HELP WANTED

FEED DEPARTMENT MANAGER: SPLENDID opportunity for young man with large regional farm cooperative in Midwest. Must have at least a B.S. in Animal Husbandry, preferrably from a Midwest school, and some experience in feed sales and merchandising. Address Ad No. 4029, Feedstuffs, Minneapolis 40, Minn.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

WANTED: FOX NO. 224 STATIONERY chopper. State condition and price. Clay Center Alf. Dehy. Co., Box 12, Clay Center, Kansas.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

EQUIPMENT WANTED

WANTED: 200 USED STEEL BUCKETS for bucket elevator, sizes 10 or 11x7. Address Ad No. 4025, Feedstuffs, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

FOR SALE: FEED AND FERTILIZER business, includes portable grinder and mixer, a 7 ton bulk fertilizer spreader truck, ample space for all operations, storage, etc. Only $5,000 down, balance good terms. Located in Southwest Minnesota, Jackson County. Address ad No. 3977, Feedstuffs, Minneapolis 40, Minn.

Contact—
MID-WEST BUSINESS EXCHANGE
When you want to Buy or Sell
ELEVATORS or
FEED MILLS
Ohio - Indiana - Illinois
Excellent Opportunities
Halbert C. Smith Plymouth, Ind.

EQUIPMENT FOR SALE

BARGAINS: 16" MILKHOUSE AND POULTRY house fans complete with screen, hood and shutter. Approved unit $33.50. 20" barn fan with shutter, hood and switch, complete $52.50. Electric Motor Supply Co., 100 3rd Ave. No., Minneapolis, Minn., FE 9-0716.

Buy Only Seedburo
Guaranteed Factory Rebuilt
STEINLITE
MOISTURE TESTERS
Remember all Seedburo Steinlites are rebuilt by the Fred Stein Laboratories in Atchison, Kansas, who are the manufacturers. Each unit is completely rebuilt and carries full year guarantee. For details and prices write Dept. FS.
SEEDBURO EQUIPMENT CO.
618 W. Jackson Blvd. Chicago 6, Ill.

BEAT HIGHER FEED COST!
Iowa Economy Beef Supplement's advantages become more important as the protein cost of other, no-better, supplements rises. Dehydrated Ground Corn Cob Meal is the approved base for the Iowa Economy Supplement. Your most dependable and reliable source for the finest Dehydrated Corn Cob Meal is:
PAXTON PROCESSING CO., INC.
P. O. Box 120 Paxton, Ill. Phone 222

BURROWS EQUIPMENT CO.
1314 Sherman Ave. Evanston, Ill.

Report Issued on Risks of Feeding High-Salt Pellets

A bulletin distributed by the Montana Feed Manufacturers & Dealers Assn. reports dangers involved in feeding pelleted high-salt rations to cattle free choice under certain conditions.

The report was prepared by Al Beggs, Occident Elevator Division, Russell-Miller Milling Co., Minneapolis, former president of the association.

The purpose of the report, it was stated in the bulletin, was to stop the possible spread of misinformation derogatory to the feed industry as the result of a number of cattle in an eastern Montana herd being killed, apparently by over-eating a pelleted high-salt wintering ration designed to limit consumption of feed.

"The pellet form of this type of ration is easily 'bolted' by cattle without adequate mastication, resulting in an ability to consume lethal amounts of salt before the inhibitory effect of the salt is evident to the animal," Mr. Beggs explained in the conclusions of the report.

"An initial 'accustoming' period of feeding free of excessive stress factors is required. During this period, cattle that swallow pellets whole have an opportunity to discover the after-effect produced by the salt at a time when their hunger is satisfied by sublethal quantities of the feed mixture.

"The length of this stress-free period is problematical. It likely varies with individual animals and herds. The minimum time appears to be at least two weeks, and quite possibly as much as four weeks."

Cause of Losses

Mr. Beggs said the investigation indicated death losses were due to a combination of circumstances, and the absence of any one of them would probably have held losses to a nominal number. "In our opinion these circumstances were 'boltability' of the feed form, severe weather stress conditions, and inadequate initiation of the cattle to the feed," Mr. Beggs stated.

He mentioned that any level of salt in excess of 20% in a pelleted feed could conceivably have caused the losses described.

In the report Mr. Beggs drew up a list of recommendations for avoiding dangers of feeding livestock pelleted, high-salt rations.

"It would probably be best for feed manufacturers to refrain from pelleting high-salt rations based on the considerably added cost occasioned by excessive corrosion and abrasion," he suggested. "We recommend that 'appetizers' and/or flavoring ingredients be used sparingly, if at all, in high-salt rations in either meal or pellets."

"Ranchers should be warned verbally of the potential danger in feeding high-salt rations, and particularly pelleted rations, under extreme stress conditions."

Feeding Instructions

"Written feeding instructions and warnings should appear on the label of any feed (other than a mineral feed) which contains over 20% salt. In case no labels are used, as on custom mixes, this information should be written on the invoice or accompany the invoice to the rancher," it was stated in the report.

"In the case of pelleted high-salt feeds, instructions and warnings should include advice on initiation of cattle to the feed during a stress-free period of approximately 30 days and with the further admonition to observe cattle carefully at the end of the period to be sure that all are well accustomed to the feed."

Mr. Beggs concluded his report by saying: "To our knowledge this is the first case of serious poisoning on a ration high in salt not apparently due to lack of adequate water or roughage. The practice of using salt as a concentrate consumption inhibitor for range cattle is widely accepted. It is useful and has its place in ranch operations. Salt is a poison when used in excess, but this fact has been too often overlooked by all segments of the cattle industry. An unfortunate experience like this may help point up potential danger."

Copies of the report are available from H. C. Johnson, secretary of the Montana Feed Manufacturers & Dealers Assn., c/o Montana Flour Mills, Great Falls, Mont.

C. W. Mumford Retires

NEWARK, DEL.—Carroll W. Mumford retired recently after 35 years as superintendent of the poultry farm at the University of Delaware. Mr. Mumford has helped pioneer the development of electric brooding and automatic lighting devices. He also has demonstrated that adding high levels of certain vitamins to the diets of laying birds not only improves interior quality, but also the maintenance of quality in market eggs.

University of California Gets Grant from Pfizer

NEW YORK—A $3,600 grant has been given to the University of California by Chas. Pfizer & Co., Inc., New York, to establish a fellowship in the university's department of biochemistry.

According to M. A. Stewart, dean of the graduate division, the fellowship will be awarded to a distinguished student pursuing a course of study leading to a Ph.D. degree in biochemistry. To be administered by the university, the grant will be used to cover student tuition and all laboratory fees.

SW
FOR THE BEST IN
BUCKET
ELEVATORS
SPROUT-WALDRON
MUNCY, PENNA.

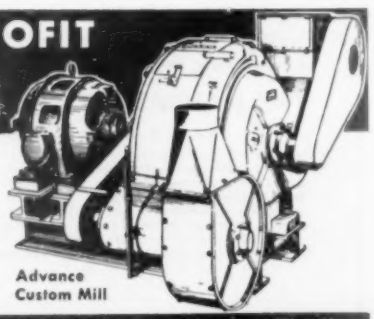
GET DETAILS ON *Blue Bonnet*
BEFORE YOU BUY ANY
BULK STORAGE OR FEED TANK

EXCLUSIVE FEATURES!
—Two directional discharge valve
Allows one feed tank to serve two buildings
"V" design valve with lever action cleanout
Rugged construction
Easy loading hatches
Weathertight roofs
Easy add-on units permit capacity increases after erection with most models

See your dealer or write for literature today!
KILBY STEEL COMPANY
ANNISTON, ALABAMA

Hoffman
for complete nutritional service
Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

You invest for PROFIT
when you buy PRATER
Send for Proof-Positive Survey
that reveals in black and white — backed by facts — that there's more Profit with Prater.


Advance Custom Mill
PRATER PULVERIZER CO. 1537 S. 55th Ct. Chicago 50, Ill.

CHECK FEEDSTUFFS WANT ADS!!

The Feed Man's Library

Reader Service Department

Feedstuffs

FEEDS AND FEEDING, 22nd Edition

By Frank B. Morrison and Associates

Feeds and Feeding has again been entirely revised, because of the many discoveries made in nutrition and livestock feeding. In this 22nd edition, particular emphasis is placed on the new developments. The numerous experiments are summarized which have dealt with antibiotic, arsenic and surfactant supplements, and with hormones, including stilbestrol. Full information is given concerning requirements of various classes of stock for the vitamins, including B and the unidentified factors. The Appendix Tables are enlarged by 40%, with composition and digestible nutrients of 1,100 feeds **$9.50**

ANIMAL NUTRITION, 4th Edition (1956)

By Leonard A. Maynard

It covers the standard, constantly-needed facts on feeding farm animals, and also the newly discovered facts about how certain acids, minerals, vitamins, etc., can help in raising healthier, more productive animals.
474 pages, 77 illustrations and tables **$7.50**

BEEF CATTLE, 4th Edition

By Roscoe R. Snapp

Covers breeding, feeds, feeding, economic trends, equipment, etc. Includes a report of hundreds of feeding experiments. Has a special chapter on sterility by Dr. Harry Hardenbrooks, Jr., assistant professor of veterinary medicine, University of Illinois. 641 pages **$6.50**

USE OF ANTIBIOTICS IN AGRICULTURE (1956)

Proceedings of the First National Conference

Held under the Auspices of the Agricultural Board and the Agricultural Research Institute, National Academy of Sciences, National Research Council, Oct. 19-21, 1955. Foreword by L. A. Maynard, chapters are sessions, presided over by C. F. Huffman, Damon Catron, H. D. Branion, J. G. Horsfall and W. W. Spink. A collection of scientific papers and panel discussions by leaders in the field **$2.50**

RAISING LIVESTOCK

By Walter H. Peters and G. P. Deyoe

This book provides the owner, manager or caretaker of farm or ranch with easily found, specific suggestions for solving problems confronted in producing, handling and managing livestock, including preparing for market, selecting, feeding, housing, breeding and marketing influences. It tells of the many jobs to be done and exactly how to do them. 519 pages, 240 illustrations..... **$7.50**

DAIRY CATTLE FEEDING and MANAGEMENT, 4th Edition

By H. O. Henderson and Paul M. Reaves

Based on the original work by Carl W. Larson and Fred S. Putney. Expanded 10%, the Fourth Edition adds new chapters on minerals and vitamins, and much recent material on hay-crop silage, grass land farming, dairy cattle health programs, and digestion in the rumen and milk secretion. Designed for use profitably by the student and the practicing dairyman. 614 pages..... **$6.50**

DAIRY CATTLE—Selection, Feeding and Management, 4th Edition (1955)

By W. W. Yapp and W. B. Nevens, Agricultural Experiment Station, University of Illinois

Part 1—Dairy Farming; Part 2—Selection and Breeding; Part 3—Feeding; Part 4—Managing; Part 5—Financial Aspects; Part 6—Milk Secretion; Care and Merchandising; Part 7—Producing Roughages; Part 8—Providing Good Buildings; Part 9—The Future of Dairying. A recognized text of great value to all engaged in dairying, especially to students..... **$4.75**

SWINE SCIENCE, 2nd Edition (1957)

By M. E. Ensminger, Ph.D., State College of Washington, Head Department of Animal Science

A complete yet easily understood reference for swine feeders, breeders and those in auxiliary services to them. Covers history and development of the industry, its distribution, adaptation and future; types and breeds, establishing the herd, meat type breeds, selection and judging, breeding, feeding, grains and high energy feeds, protein, vitamin and milling by-product feeds, pastures, buildings and equipment, health and disease prevention, marketing and slaughter, management and showing. 543 pages, 192 illustrations..... **$5.00**

SWINE FEEDING AND NUTRITION (1957)

By T. J. Cunha, Department of Animal Husbandry and Nutrition, University of Florida

A new text for feeders, teachers of animal husbandry and their classes, county agents, nutritionists and workers in veterinary pharmaceuticals. Dr. Cunha is head of the Department of Animal Husbandry, a member of the Nutrition Committee of the American Society of Animal Production and the Swine Nutrient Requirements Committee of the National Research Council. The book includes reports on the most recent scientific feeding studies on swine.
300 pages, 47 tables, 48 illustrations **$5.00**

SWINE PRODUCTION, 2nd Edition (1956)

By W. E. Carroll and J. L. Krider

A guide to organization, establishment, management, feeding and marketing operations in raising of hogs. 496 pages, 65 illustrations..... **$7.00**

RAISING SWINE—

By George P. Deyoe

A practical swine raiser's handbook. Stock selection, record keeping, feeding, care and handling, marketing techniques and preparing pork for home use. 447 pages, 261 illustrations, 40 tables **$6.95**

THE HANDBOOK OF FEEDSTUFFS (1957)

By Rudolph Seiden and W. H. Pfander

An encyclopedic presentation of production, formulation and medication. Designed to increase feed efficiency, explaining thousands of terms. Valuable to ranches and farms in production of feeds from right crops, utilization of plant as pasture, silage, hay, etc., and as an officially recognized feed product (meal, bran, grit, cake, etc.). Explanations and practical advice on medicated feeds, mineral feedstuffs, trace elements, growth stimulants and chemicals of importance to stockmen and poultry growers. Useful to feed manufacturers, nutritionists, students of animal biology, etc. 800 pages, 175 illustrations, cloth binding **$8.00**

THE STOCKMAN'S HANDBOOK (1956)

By M. E. Ensminger, M.S., M.A., Ph.D.

Intended for stockmen, those who counsel with stockmen and for teachers in animal agriculture. First 120 pages particularly of interest to feed trade, as breeding and feeding of livestock are covered. Other chapters have to do with judging, management, marketing, etc. The 1956 edition is the fourth printing, indicating strong demand for this guide. 598 pages, well illustrated, many tables. A practical handbook **$8.50**

MANAGING FOR GREATER RETURNS in Country Elevator and Retail Farm Supply Businesses

By Richard Phillips, Iowa State College economist

Written as a basic reference book for elevator and farm store managers, this book includes valuable information on over-all planning and management. Some of the topics included are planning for maximum business efficiency, use of an effective accounting system, increasing employee productivity, improving customer relations, improving purchasing, management of credit and operation of custom services. 500 pages **$7.00**

SCIENTIFIC FEEDING OF CHICKENS (1955)

By Dr. H. W. Titus

A small but absolutely authentic and concise treatment of vital information for feeders and feed manufacturers. 43 formulas for diets and mashes, vitamin content of over 60 feedstuffs; what feedstuffs are best, deficiency diseases; also relationship between feed consumption and egg production.
297 pages, hard binding **$4.00**

THE GRAIN TRADE: How It Works (1956)

By James S. Schonberg, Vice President, Uhlmann Grain Company

A comprehensive book on the mechanics of merchandising and trading in cash and grain futures in the U.S. and Canada. Tells of what happens to grain following its purchase from the farmer, how it is graded, stored and conditioned, the establishing of price even before the crop is planted, the role of the university professor in the grain trade. This authoritative book will become the leading reference book on this subject for farmers, county agents, legislators, foreign buyers, government personnel, teachers, etc. **$6.00**

FEEDING POULTRY, 2nd Edition

By Gustave F. Heuser, Professor, New York State College of Agriculture, and the School of Nutrition

Meets the needs of poultry producers, feed dealers and poultry students for the latest authoritative information on how to raise the best poultry by employing modern feeding methods. It evaluates findings on the value of feeds, types of feed to be used and nutritive economy. Deals with feeding and management for various purposes, chicks, breeders and egg producers. 632 pages..... **$7.95**

POULTRY NUTRITION, 4th Edition Revised and Enlarged

By W. Ray Ewing

1,500 pages, 123 illustrations, of practical, factual information for feed manufacturers, feed dealers, hatcherymen, breeders. New chapter on antibiotics, new growth charts, feed formulas for rapid growth..... **$12.50**

POULTRY HUSBANDRY, 3rd Edition

By Morley A. Jull

526 pages, 254 illustrations, covers all aspects of the poultry business, from planning and building poultry plant to preparing poultry products for market. Breeding techniques, feeding procedures, disease control, incubation; it is an "encyclopedia" of poultry raising..... **$6.50**

POULTRY PRODUCTION—

By Leslie E. Card, Ph.D.

Eighth Edition, 416 pages, 216 illustrations and four plates. Deals with broiler production, flock management and marketing, breeding and selection, nutrition, disease control, etc. **$5.00**

HATCHERY OPERATION AND MANAGEMENT

By Ernest F. Funk and M. Richard Irwin

New, 1955; a practical guide to hatchery operation for the experienced and inexperienced. Covers all phases of the business, including advertising, selling, office procedures, labor costs, equipment, chick selection, sexing, etc. 350 pages, well illustrated **$7.50**

SUCCESSFUL POULTRY MANAGEMENT, 2nd Edition

By Morley A. Jull

447 pages, 188 illustrations, based on practical experience, brings practical helps for choosing breeds, increasing broiler and egg production, building range shelters, estimating egg output, buying feed, candling eggs, etc. **$5.75**

KEEPING CHICKENS IN CAGES, 4th Edition (1956)

By Roland C. Hartman, Editor Pacific Poultryman and Dale F. King, Dept. of Poultry Husbandry, Alabama Polytechnic Institute

A thorough revision of this reliable work on cage laying plants. Newly illustrated and broadened in scope with addition of Professor Dale F. King as co-author. More about feeding-results of experiments with caged layers. The importance of protein and energy levels for the highly bred producing stock. 304 pages, 176 illustrations, cloth bound **$5.00**

TURKEY MANAGEMENT, 6th Edition (1955)

By Stanley J. Marsden and J. Holmes Martin

A text on turkey raising and marketing by Stanley J. Marsden, Poultry Husbandman at the U.S. Research Center, Beltsville, Md., and J. Holmes Martin, Head of the Poultry Department, Purdue University. Covers breeding, rearing, feeding, preparation for the market, shows; diseases and their prevention and control. 1,000 pages, 124 illustrations **$7.00**

THE FEED MIXERS HANDBOOK, 2nd Edition (1956)

By Ross M. Sherwood

A text for feed mixers with special reference to the nutritional aspects of feed formulation. A practical handbook for practical men.
208 pages, cloth bound **$3.00**

No C. O. D.'s

ORDER FROM Reader Service Department, Feedstuffs, P.O. Box 67, Minneapolis 1, Minn.

TRANQUILIZER

(Continued from page 1)

be an excellent growth promoter for cattle.

"Initial findings of Pfizer research nutritionists have been confirmed by widespread experimental trials, conducted during the past two years, by leading agricultural experiment stations and by commercial cattle-raising operations," the announcement stated.

In summarizing results obtained by the addition of Tran-Q to beef cattle rations, Pfizer spokesmen said that data from a total of 31 trials showed an average growth stimulation of beef cattle of 9%, along with an increased feed utilization of 7%.

The increased dollar return to the grower from animals receiving Tran-Q, summarized for the 31 trials, was $5.52 per head more than for those not receiving the new Pfizer supplement, the announcement said.

The reasons for the growth-stimulating effects of the new tranquilizer additive are not yet fully apparent, the announcement pointed out. However, Pfizer research scientists said they believe that a relief from stresses under which animals live may have much to do with the beneficial effects resulting from tranquilizer use. It is possible, they report, that the small doses of tranquilizing drugs exert a protective effect against environmental stress which is not ordinarily discernible in the animal's gross behavior. Also, the action may be mediated through the nervous system to the organs of digestion and assimilation. There are apparently no signs of sedation in the animals themselves, they reported.

"Starvation, over-crowding, and inadequate protection from weather are but a few of the more common stresses with which animals must contend," comment Pfizer investigators. "Ways that can be found to help cattle adjust to a new or changing environment are valuable tools in the hands of profit-minded feeders."

Research into additional uses of Tran-Q is continuing at Pfizer's research center as well as at experiment stations and commercial cattle lots.

HATCH

(Continued from page 1)

The July turkey increase was a sharp boost of 33% in the total of all breeds hatched, compared with the same month of 1957. The total of all breeds hatched during the month was 6,385,000. This brought the cumulative total of turkeys hatched for the first seven months of the year to 76,832,000—5% short of the total of 80,929,000 on Aug. 1 a year earlier.

A count of turkey eggs in incubators Aug. 1 also showed an increase of 33% over the same date in 1957.

The big increase in turkey hatchings came primarily among heavy breeds, which were up 52% over July, 1957. This increase follows a 7% increase in heavy breeds in June, which had been the first month this year to show an increase over the same month the year before.

Heavy breed totals for the first seven months of the year were 5% off the total for the same period of 1957, and the light breeds were down 4% for the period.

Strong demand for broiler-type chicks was also indicated by the report. Production during July was 169,464,000, a boost of 18% over July, 1957. For the first seven months of this year, the total is 16% ahead of the previous year.

The report also showed that the number of eggs for broiler-type chicks in incubators on Aug. 1 was 17% ahead of the previous year.

Economist Says Egg Prices Might Drop

ST. PAUL—The faster poultrymen can get their new flocks into peak production this year, the higher net return they stand to make, according to Dr. William H. Dankers, University of Minnesota department of agricultural economics.

He says egg prices may decline rather sharply in the latter part of the year or the early part of next year. "Prices in a year like this are best in the early part of the laying season," he declared.

"Figures from the state-federal crop and livestock reporting service show that 19% more young chickens were raised on Minnesota farms this year than in 1957. The increase was 10% for the nation."

This situation, according to Dr. Dankers, shows clearly the value of getting chicks as early as possible in the season. Producers who bought chicks early can take advantage of good prices before the decline occurs.

"The egg price outlook also makes it inadvisable to keep old hens for another whole year," Dr. Dankers says. "Old hens do not produce as efficiently as young ones and may actually lose money when prices have declined. However, the yearling hens will probably be very good property until the price decline begins."

Dr. Dankers attributes the increase in chicken numbers to higher egg prices in early 1958, coupled with lower feed prices. Egg prices during the first six months were more than 20% above 1957, while feed prices averaged 3% lower than during the previous year.

Cotton, Peanut Plant To Close in Alabama

ANDALUSIA, ALA.—The Andalusia cotton and peanut processing plant of the Southern Cotton Oil Co., division of the Wesson Oil and Snowdrift Co., is being closed down effective Sept. 1, it was announced by J. S. Long, Alabama district manager for the company.

Mr. Long said acreage reductions have reduced the volume of activity of the plant to a point where it is impossible to operate on a profitable basis.

The plant has for the past 50 years been one of Andalusia's leading cotton and peanut processing operations.

HONEGGERS'

(Continued from page 1)

and 14% above the five-year average, he said. Feed tonnage was up 13% from the average of the last five years and net earnings more than doubled the previous year. He said acquisition of the Green Gable Builders, Inc., Onawa, Iowa, two years ago makes Honeggers' the world's largest manufacturer of prefabricated wooden farm buildings.

"The company's product lines have been expanded during the past year, particularly in the equipment field," he said. "These new products have met with enthusiastic customer acceptance, expanding dealer profits and improved compensation for territory salesmen. Naturally, this also improves and stabilizes company profits."

Sale of livestock and poultry equipment showed a 64% increase over the previous year, he reported. Production of some two dozen different kinds and types of equipment items was initiated during the year at the company's metal fabricating plant at Taylorville, Ill.

Stockholders approved a $500,000 plant expansion and modernization program.

Mr. Honegger also announced the election of L. H. Fairchild, vice president and general manager of the firm's new Lincoln, Neb., operations, to the board of directors. (Picture on page 7.)

PL 480

(Continued from page 1)

single handed at U.S. Department of Agriculture, although he did have full support from the USDA front office.

In lieu of Section 2 of the House amendment, the House conferees proposed that Section 303 of the Agricultural Trade Development and Assistance Act of 1954 be amended to read as follows:

"Section 303. The secretary shall, whenever he determines that such action is in the best interest of the U.S., and to the maximum extent practicable, barter or exchange agricultural commodities owned by the Commodity Credit Corp. for (a) such strategic or other materials of which the U.S. does not domestically produce its requirements, and which entail less risk of loss through deterioration or substantially less storage charges as the President may designate, or (b) materials, goods or equipment required in connection with foreign economic and military aid and assistance programs, or (c) materials or equipment required in substantial quantities for offshore construction programs.

"He is hereby directed to use every practicable means, in cooperation with other government agencies, to arrange and make, through private channels, such barters or exchanges, or to utilize the authority conferred on him by Section 4 of the Charter Act, as amended, to make such barters or exchanges.

"In carrying out barters or exchanges authorized by this section, no restrictions shall be placed on the countries of the free world into which surplus agricultural commodities may be sold, except to the extent that the secretary shall find necessary in order to take reasonable precautions to safeguard usual marketings of the U.S., and to assure that barters or exchange under this act will not unduly disrupt world prices of agricultural commodities or replace cash sales for dollars.

"The secretary shall endeavor to cooperate with other exporting countries in preserving normal patterns of commercial trade with respect to commodities covered by formal multilateral international marketing agreements to which the U.S. is a party.

"Agencies of the U.S. government procuring such materials, goods or equipment are hereby directed to cooperate with the secretary in the disposal of surplus agricultural commodities by means of barter or exchange. The secretary is also directed to assist, through such means as are available to him, farmers' cooperatives in effecting exchange of agricultural commodities in their possession for strategic materials."

The House conferees, as part of this offer, proposed to accept Section 5 of the Senate bill.

FEED MAN APPOINTED

MINNEAPOLIS—Frank T. Heffelfinger, II, vice president and general manager, Peavey Feed Mills, Minneapolis, has been appointed associate general co-chairman of the 1959 Minneapolis Farm Forum, the Minneapolis Area Chamber of Commerce has announced. Mr. Heffelfinger has served as chairman of the agricultural committee of the Minneapolis Chamber and also as a member of the steering committee of the forum. The purpose of the forum is to bring "a thorough, objective and open discussion to broad problems of agriculture, industry and labor."

ELEVATOR FIRE

OMAHA, NEB.—A bin room atop the roof of the grain elevator of the Roy A. Scofield Co., Omaha, was badly charred by fire recently. Mr. Scofield said there was also extensive water damage to feeds stored on the first floor.

Effective Newcastle Vaccine Developed By USDA Scientists

WASHINGTON—A safe, effective killed-virus vaccine for Newcastle disease in chickens has been developed by U.S. Department of Agriculture scientists, the USDA announced this week.

A complete report on the development was made at the American Veterinary Medical Assn. annual meeting in Philadelphia Aug. 21 by Dr. Eugene Gill, veterinarian of the Agricultural Research Service.

Dr. Gill's report covered the final phases of work in the development and testing of the new vaccine. Earlier phases of the project included: (1) determination of the strain of Newcastle disease virus that produced the greatest degree of immunity in chickens, and (2) finding the best method of killing the virus with the least effect on its ability to immunize the chickens.

The report this week dealt with the comparative efficiency of several adjuvants, substances that heighten immune response when incorporated in the vaccine, the USDA report said.

USDA scientists found that following inactivation of the GB Texas strain of Newcastle virus, one of the most potent in its live state, a satisfactory degree of immunity was obtained in vaccinated test birds.

A new organic chemical intermediate, beta propiolactone, recently developed by a private manufacturer, is used to inactivate the virus—making it safe—while only slightly lessening its ability to induce immunity.

In the final phase of their work, the scientists found that two adjuvants — aluminum hydroxide and phosphorylated hesperidin — acted similarly in increasing immunity induced by the vaccine. A single injection of the killed vaccine when given to 14-day-old chickens was found to protect the birds throughout the broiler growing period. Revaccination at 12 weeks of age protected birds up to 32 weeks of age, the longest period tested in these trials.

The announcement said USDA veterinarians have constantly stressed the need for safe vaccines to be used on farm animals. A safe vaccine is incapable of spreading a disease, is free of contaminating disease organisms and it retains its ability to induce immunity after prolonged storage. The use of killed vaccines offers the best possibility for the eventual eradication of Newcastle disease, USDA scientists said.

NORTH CAROLINA

(Continued from page 1)

minating over-eating, or cannibalism."

Representatives of the North Carolina Agricultural Experiment Station expressed the opinion that research has not yet reached the stage where the most advantageous protein and fiber recommendations can be made, and for this reason the board authorized the new standards for only a limited time to permit wider experimentation.

The regulation provides that labels for the high-fiber feeds must carry the following statement: "To be fed to pullets (or to young turkey hens, if it is a turkey feed) to delay sexual maturity or onset of egg production."

NEW MULTIWALL EQUIPMENT

TOLEDO, OHIO—New equipment, including two tubers with the necessary supporting bottomers and printing presses, is being installed at the multiwall bag plant of Owens-Illinois Glass Co. in Valdosta, Ga. Tom W. Brown, Jr., division manager at Valdosta, stated that the new equipment will result in a substantial increase in the plant's production capacity.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A & D FEEDING OIL

Boston: Demand light; supply good; 600 D, 1,500 A, 18¢ lb.; 300 D, 2,250 A, 18½¢; 300 D, 1,500 A, 17¢; 300 D, 750 A, 15½¢.

New York: Trend steady; price per lb. in 55-gal. drums (413-420 lb.) 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Chicago: Demand fair; supply adequate; straight A feeding oil with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

ALFALFA MEAL

New Orleans: Demand good; supply adequate; trend steady; $48@49, pellets $46@47.

Ft. Worth: Demand fair for dehydrated; good for suncured; sufficient offerings dehydrated; limited on suncured; 17% protein dehydrated $46 delvd. Ft. Worth area truck; Kansas dehydrated 17% 100,000 A, $48.75 rail; suncured No. 1 13% protein ⅛" grind, truck $40.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A, $48.

Los Angeles: Demand quiet; trend steady; supply ample; dehydrated pellet meal, 17% pro-100,000 'A', $50@51; dehydrated meal, 17% pro-100,000 'A', $48@49; suncured crumbles, 15% protein, $44@46; suncured meal, 15% protein, $42@44.

Portland: Demand good; supply ample; trend higher; suncured $37, dehydrated $65.

Kansas City: Demand slacked off some with slower feed business now rated fair; trend steady; supply adequate but the steady rains have hurt quality with the result that material under gas storage is generally of low quality, a slight improvement in quality has been reported in Nebraska area this week. Dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival $35@35.50, sacked; 17-100,000 reground pellets $40, sacked; 17-100,000 pellets $32@35; 15% protein 125,000 A meal $45, sacked; suncured demand is slow with supplies being produced on order, No. 1 fine ground $34.50, No. 1 ¼-inch $31.50@32, No. 2 ¼-inch $29@31, sacked.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $39.50@40.50.

Minneapolis: Demand fair; trend steady; supply adequate; reground 17% pellets, 100,000 units vitamin A guaranteed, $45.50; granules and oil treated, bulk, $43.50.

Omaha: Demand fair; supply ample; 17% 100,000 units vitamin A bulk pellets $33; sacked meal $37, Omaha basis.

Buffalo: Demand and supply fair; trend steady; $54, Boston.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A, $43.

Boston: Demand slow; supply adequate; dehydrated 17%, $53.25; suncured 13%, $51.50 nominal.

St. Louis: Demand slow; supply ample; trend steady; 13% fine, suncured $39.50; dehydrated 17% meal, 100,000 A $41.

Philadelphia: Demand and supply fair; 17% dehydrated, 100,000 units A, $53.50.

ANIMAL FATS (STABILIZED)

New Orleans: Demand good; supply adequate; trend steady; 8@8¼¢ lb. tank cars.

Louisville: Demand fair; trend steady; supply good; bleachable fancy 8¢ lb.; white tallow 8¼¢ lb.; yellow grease 6½¢ lb.

Ft. Worth: Demand good; supply light; prime tallow, tank cars 7¾¢; drums 9¾¢, f.o.b. north Texas packing plants with returnable drums.

St. Paul: Steady demand from feed and export sources; 7¾¢ lb., f.o.b. producer's plant for bleachable fancy tallow.

Chicago: Demand fair; supply adequate; bleachable fancy tallow, tank truck or carlots, 7¾@7¾¢; yellow grease 7@7¼¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 8¾¢ per lb.; yellow grease 7¾¢ per lb.

Kansas City: Demand off a little; trend steady; supply adequate; bleachable fancy tallow 7¾¢ lb., tank car, Kansas City.

BARLEY FEED

Portland: Demand good; supply ample; trend unchanged; rolled $59; ground $57.

Ogden: Supply average; rolled $43@47; whole barley $36@41.

Los Angeles: Demand slow; supply adequate; trend stronger; standard rolled $3.05 cwt. sacked; standard ground $3.05 cwt. sacked.

New Orleans: Demand slow; supply light; trend easier; $58@59.

Baltimore: Demand good; supply light; $46.50.

Philadelphia: Demand slow; supply fair; pulverized $46.

Boston: Demand slow; supply adequate; $45.

Chicago: Demand good; supply light; $38.

Milwaukee: Demand fair; supply good; needles 90¢@$1, ground screenings $26.

San Francisco: Demand fair; supply ample; rolled $59, ground $58.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots, 80 granular $30.21; 200 mesh fine $29.96.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand slow; supply good; trend easy; $110@115.

BLOOD MEAL

New Orleans: Demand good; supply light; trend steady; $129@134.

Louisville: Demand slow; trend easy; supply good; $110@115.

Ogden: Supply average; $120 in 100-lb. bags.

Los Angeles: Demand and trend steady; supply adequate; $7.50@7.75 unit of ammonia.

Portland: Demand slow; supply ample, trend weak; $120.

Chicago: Demand and supply fair; $140@150, guaranteed 80% protein.

San Francisco: Demand good; supply tight; $7.25 unit of ammonia.

BONE MEAL (STEAMED)

Cincinnati: Demand fair; supply ample; trend steady; $90 sacked, Cincinnati.

Louisville: Demand slow; supply normal; trend easy; $85@90.

Los Angeles: Demand and trend steady; supply limited; imported $68 in 20 ton lots.

Portland: Demand good; supply ample; trend unchanged; $95.

New Orleans: Demand good; supply normal; trend unchanged; $99@109.

Ft. Worth: Demand fair; supply adequate; $85.

Chicago: Demand and supply fair; $85@90.

Boston: Demand and supply steady; $88.

Buffalo: Demand good; trend steady; supply ample; $90.

San Francisco: Demand good; supply ample; $75.

BREWERS DRIED GRAINS

Cincinnati: Demand fair; trend steady; supply adequate; $50.

Los Angeles: Demand and trend steady; supply limited; $49 bulk, $53 sacked.

New Orleans: Demand fair; supply ample; trend steady; 26% $48@51.

Louisville: Demand good; supply scarce; trend steady; $49.

Ft. Worth: Demand fair; supply moderate; 26% $51.65, August.

St. Louis: Demand slow; trend steady; supply ample; $45.

Buffalo: Demand and supply fair; trend steady; $48, bulk, Boston.

Boston: Demand and supply steady; 26%, $55@56; 22%, $55 nominal.

Philadelphia: Demand slow; supply light; $57.50.

Chicago: Demand fair; supply adequate; 26%, $46.50@47.

Milwaukee: Demand good; supply fair; $46.50.

San Francisco: Demand fair; supply ample; $54.

BREWERS DRIED YEAST

Louisville: Demand good; trend steady; supply fair; 10@10½¢ lb.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

Portland: Demand good; supply ample; trend unchanged; 8½¢.

Chicago: Demand good; supply limited; 10@11¼¢ lb. in carlots; 10¼@12½¢ l.c.l.

Boston: Demand and supply steady; 10¢ lb.

Buffalo: Demand good; supply limited; trend firm; $9.75 cwt.

Omaha: 10½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

BUTTERMILK-CONDENSED

Ogden: Supply normal; $4.40 100-lb. drum.

Louisville: Demand slow; supply ample; trend steady; $4.25 cwt.

New Orleans: Demand poor; supply ample; trend steady; $4.25@4.50 cwt.

Wichita: Demand good; supply insufficient; $2.85, 100-lb. barrel.

Los Angeles: Demand fair; trend steady; supply adequate; 5¼¢ lb. in 100 lb. lots; 4¼¢ lb. in 500 lb. lots.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Chicago: Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

Boston: Demand slow; supply light; 3½¢ lb.

San Francisco: Demand fair; supply good; $5 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.63, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Los Angeles: Demand good; supply ample; trend steady; $10.25.

Chicago: Demand steady; supply adequate; fine grind, plain $9.67; bulk, in hopper cars, fine grind $7.67; bulk, in boxcars $8.17; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Los Angeles: Demand and trend steady; supply ample; hardwood poultry, $156 sacked in less than ton lots; $144.50 sacked in ton lots.

Cincinnati: Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

Boston: Demand and supply light; $100.

Chicago: Demand quiet; supply adequate; poultry charcoal $106 ton in 50-lb. multiwalls.

San Francisco: Demand steady; supply ample; $141.

COCONUT OIL MEAL

Los Angeles: Demand improved; trend stronger; small offerings; copra cake, $71@72.

Portland: Demand slow; supply limited; trend unchanged; $70.

San Francisco: Demand fair; supply ample; solvent $63, expeller $70.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (413-420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply good; 600 D, 2,250 A, 21¢ lb.; 300 D, 2,250 A, 20¢; 300 D, 1,500 A, 17½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand and trend steady; supply limited; 5@5¼¢ lb.

New Orleans: Demand light; trend slow; supply limited; $91@94, f.o.b. Gulf.

New York: Demand and supply fair; trend steady; 4¾@4⅞¢ lb., f.o.b. eastern shore.

Boston: Demand good; supply short; 5¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.80, meal $88.80.
Atlanta: Feed $55.98, meal $94.98.
Birmingham: Feed $54.64, meal $93.64.
Boston: Feed $54.84, meal $93.84.
Chicago: Feed $43, meal $82.
Cleveland: Feed $51.14, meal $90.14.
Denver: Feed $53.51, meal $92.51.
Ft. Worth: Feed $51.96, meal $90.96.
Indianapolis: Feed $48.36, meal $87.36.
Kansas City: Feed $43, meal $82.
Louisville: Feed $50.21, meal $89.21.
New Orleans: Feed $53.20, meal $92.20.
New York: Feed $54.43, meal $93.43
Norfolk: Feed $53.71, meal $92.71.
Philadelphia: Feed $54.02, meal $93.02.
Pittsburgh: Feed $51.96, meal $90.96.
St. Louis: Feed $43, meal $82.

CORN OIL MEAL

Louisville: Demand dull; supply ample; trend steady; $50.45.

Cincinnati: Demand poor; supply adequate; trend steady; $51.

COTTONSEED OIL MEAL

Portland: Demand good; supply ample; trend unchanged; $68.

Ogden: Supply normal; 41%, $65@70.

Los Angeles: Demand and trend steady; supply ample; local production, 40% protein, $56@58.

New Orleans: Demand slow; trend steady; supply adequate; $79@82.50.

Louisville: Demand slow; supply ample; trend steady; old process $72; new process $69.20.

Ft. Worth: Demand slow; supply adequate; carlots, 41% old process $58 August; pellets $2 additional; cottonseed hulls $16.

Wichita: Demand slow; supply ample; 41% old process $64.50.

Cincinnati: Demand poor; supply adequate; trend steady; old process $77.

Boston: Demand fair; supply ample; $80.

Kansas City: Demand slow; trend steady; supply adequate for old process, more of solvent available, new crush to start in a few weeks; old process meal shipped from Texas $66.50@68, sacked, Kansas City; solvent meal from Texas, $64@64.50, sacked, Kansas City.

St. Louis: Demand slow; trend lower; supply fair; $68.

Chicago: Demand and supply fair; hydraulic $64; solvent $62, basis Memphis.

Memphis: Demand small; trend steady; supply limited; prime 41% protein, old process, $64, sacked; new process, 41% solvent, $64, sacked.

Omaha: Demand easy; supply ample; 41% solvent, $62.20, bulk, delivered Omaha basis.

Buffalo: Demand fair; trend steady; supply good; $79.50, Boston.

Philadelphia: Demand slow; supply fair; trend unsettled; $78.

San Francisco: Demand good; supply ample; expeller $58, solvent $60.

Atlanta: Demand fair; trend weak; supply ample; 41%, $68.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $49, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100 lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; supply ample; trend steady; 1,500 ICU 9½@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply moderate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Cincinnati: 18% phosphorus, $81, sacked; 13% phosphorus, $64.98, sacked, f.o.b. Cincinnati.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

DICALCIUM PHOSPHATE

Cincinnati: 18½% phosphate, $92@93.

Portland: Demand good; supply ample; trend unchanged; $115.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, 0.11% maximum fluorine, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more, $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

DISTILLERS DRIED GRAINS

Louisville: Demand good; trend steady and strong; supply very light; bourbon grains, light $65 ton; dark $67; solubles $79. There has been very little production for the past three months. Several distillery plants will start in September and it is understood that some of them will quote higher levels.

Cincinnati: Demand poor; trend steady; supply adequate; by truck $65.

Buffalo: Demand good; trend lower; supply fair; $68 bulk, Boston.

San Francisco: Demand fair; supply ample; solubles $85.

DRIED BEET PULP

New Orleans: Demand slow; trend steady; supply ample; $63.50@66.

Ft. Worth: Demand slow; supply sufficient; carlots, 50-lb. papers: Molasses $59; plain $66.50.

Ogden: Supply normal; $38@42.

Portland: Demand good; supply ample; trend unchanged; $50.

Los Angeles: Demand and trend steady; supply ample; molasses $48.25@50.

Milwaukee: Demand good; supply fair; plain $60, molasses $57.

Boston: Demand and supply steady; $67.50.

San Francisco: Demand good; supply fair; $47.15.

Atlanta: Demand slow; supply limited; trend steady; $66.60.

DRIED BUTTERMILK

Ogden: Supply normal; $7.25 100-lb. bag.

Los Angeles: Demand good; trend steady; supply limited; 11¢ lb.

Louisville: Demand dull; supply normal; trend steady; 11@11½¢ lb.

New Orleans: Demand slow; supply adequate; trend unchanged; $9.50@10.25 cwt.

Buffalo: Demand excellent; trend firmer; supply very limited; $11.05 cwt.

Chicago: Demand and supply fair; medium acid $9.75@10.25, sweet cream $10@10.50 cwt. in carlots.

Boston: Demand good; supply tight; 11¢ lb.

Milwaukee: Demand and supply fair; $10 cwt.

San Francisco: Demand fair; supply ample; 11¢ lb.

DRIED CITRUS PULP

New Orleans: Demand good; trend steady; supply adequate; $51.25@55, f.o.b. Florida.

Los Angeles: Demand good; limited offerings; trend firm; orange pulp $41 bulk, $46 sacked; lemon pulp $39 bulk, $44 sacked.

Buffalo: Demand and supply poor; trend steady; $48.50, f.o.b. Florida points.

San Francisco: Demand good; supply fair; meal $52.

Atlanta: Demand good; supply limited; trend steady; $56.50, meal $51.50.

DRIED SKIM MILK

Ogden: Supply normal; $15.15 100-lb. drum.

Los Angeles: Demand fair; supply limited; trend steady; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Portland: Demand good; supply ample; trend unchanged; 13¢ lb.

New Orleans: Demand slow; supply ample; trend steady; $12@12.50 cwt.

Louisville: Demand slow; trend steady; supply normal; 11@12¢ lb.

Cincinnati: Demand fair; supply adequate; trend steady; 10½@11¢ lb.

Boston: Demand and supply fair; 11¢ lb. in carlots.

Chicago: Demand and supply fair; $10@10.50 cwt. in carlots.

Minneapolis: Demand fairly good; trend steady; supply tight; $10.75@11 cwt.

Buffalo: Demand good; trend steady; sup-

ply ample; spray, $10.65 cwt.; roller, $11.50 cwt.

Milwaukee: Demand and supply fair; $11 cwt.

San Francisco: Demand and supply fair; 13½¢ lb.

Philadelphia: Demand slow; supply light; $12.50 cwt.

DRIED WHEY

Los Angeles: Demand and trend steady; supply ample; $5.90 cwt. in carloads; $6.15 cwt. in l.c.l.

Ogden: Supply average; $6.90 100-lb. bag.

Portland: Demand good; supply ample; trend unchanged; $6.05 cwt.

Louisville: Demand fair; supply normal; trend firm; 6@6½¢ lb.

New Orleans: Demand slow; trend firm; supply adequate; $5.75@6 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5.75 cwt. delvd. Ft. Worth or any Texas point; $5.85 ton lots, f.o.b. warehouse Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $5.35 cwt.; sweet $5.75 cwt.

Boston: Demand steady; supply plentiful; $5.75 in 100s.

Minneapolis: Demand and supply fair; trend steady; $5.40@5.60 cwt. Other sources quote $5.25 cwt. for both regular and partially delactosed.

Chicago: Demand fair; supply adequate; $5.25 cwt., f.o.b. plant.

San Francisco: Demand steady; supply good; $5.50 cwt.

Kansas City: Demand fair; trend steady; supply ample; $5.25 cwt. producers points for both regular and partially delactosed; regular in scarce supply because of light production.

Philadelphia: Demand slow; supply light; $6.25 cwt.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand good; supply very limited; 85%-87% protein $117, f.o.b. trucks, north Texas plants.

Los Angeles: Demand very good; trend steady; no offerings; $1.25 unit of protein.

Boston: Demand fair; supply ample; $90.

Salisbury, Md.: Demand good; trend firm; supply limited; $95, f.o.b. producers plants.

Atlanta: Demand fair; supply limited; trend steady; $96.50, f.o.b. Alabama and Georgia producing points, immediate.

FISH MEAL

Ogden: Supply average; $2.20 unit, f.o.b. Coast, 65%, $151@153.

Los Angeles: Demand limited; supply increased; trend easier; local production, 60% protein, $2.25@2.30 unit.

Portland: Demand good; supply limited; trend firm; $2.40 unit protein, f.o.b. Vancouver.

Louisville: Demand slow; supply normal; trend steady; $150@155.

New Orleans: Demand light; trend steady; supply limited; menhaden 60% $138.50@139.50; scrap $131@132, f.o.b. Gulf.

Ft. Worth: Demand good; supply limited; 60% protein $152, f.o.b. Houston.

Cincinnati: Demand fair; trend steady; supply adequate; $153.

Boston: Demand steady; supply tight; $134@135.

Minneapolis: Demand good; trend firm; supply rather tight; 60% $155@167; herring not available.

Chicago: Demand slower; supply improving; eastern menhaden fishmeal, 60% protein $135@138; western blended, 60% protein $130; Gulf, $135; northwest herring-salmon blend no offerings; Canadian herring, 73% protein $2.40 a unit of protein subject to production.

Buffalo: Demand good; trend steady; supply very limited; 60% protein, menhaden, $155 bulk; $160 sacked.

Milwaukee: Demand good; supply fair; 60%, $157.50.

San Francisco: Demand fair; supply ample; Peruvian fishmeal $2.30 unit of protein.

Atlanta: Demand fair; supply limited; trend steady; 60%, $143.

HAY

Ogden: Supply average; $1 bale; $12 ton in field; $17 in barn.

Portland: Demand good; supply ample; trend firm; $25.

Los Angeles: Demand slow; supply ample; trend steady; U.S. No. 1, $29@31; U.S. No. 2 leafy, $26@28; U.S. No. 2 green, $26@27; U.S. No. 2, $24@25.

Louisville: Demand dull; trend weak; supply good; lot of poor, wet hay and straw; old local hay, any variety, No. 1 $23@25, No. 2 $20@23; straw $18@20. Dealers still not handling much new hay if any due to fear of heating.

Ft. Worth: Demand fair alfalfa; practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@35; prairie No. 2 $26@28; No. 2 Johnson $24@26 delvd. Texas common points.

Wichita: Demand poor; supply sufficient; prairie $12@15, alfalfa $12@15.

Cincinnati: Demand poor; trend steady; supply adequate; by truck, No. 1 timothy $23.50; No. 1 second cutting green alfalfa $25; mixed $27; wheat or oat straw $20.

Boston: Demand fair; supply light; No. 2 timothy, $43@45.

Philadelphia: Demand slow; supply light; $32@35.

HOMINY FEED

New Orleans: Demand fair; trend weak; supply light; $55.50@56.

Louisville: Demand slow; supply normal; trend easy; $54.

Cincinnati: Demand good; trend lower; supply adequate; $54.

Boston: Demand and supply fair; $62.50.

Buffalo: Demand and supply fair; trend lower; $56.50 bulk, Boston.

Memphis: Demand nil; trend steady; supply ample; white $55, yellow $55.

Kansas City: Demand slow; trend weaker for forward shipments; supply adequate; yellow $41@42, bulk, this week, $40 for next week, $39 for September, $3.50 more for sacks; white $2 less.

St. Louis: Demand slow; trend steady; supply limited; yellow $52.50.

Chicago: Demand fair; supply tight; $51@51.50.

Milwaukee: Demand good; supply tight; $53 nominal.

LINSEED OIL MEAL

Los Angeles: Demand limited; light offerings; trend steady; local production, 29% protein $60@62.

Portland: Demand good; supply ample; trend steady; $78.

Louisville: Demand dull; supply ample; trend weak; old process $76.40; new process $67.40.

Ft. Worth: Demand slow; supply sufficient; carlots, 34% solvent: August $72.50; September $73.50; Oct.-Nov.-Dec. $74.50; pellets $2.50 premium.

Wichita: Demand slow; supply ample; 34% $74.50.

New Orleans: Demand slow; supply limited; trend steady; $77.50@78.

Cincinnati: Demand poor; supply adequate; trend higher; new process $66; old process $77.

Chicago: Demand fair; supply adequate; solvent $52.50@53; expeller $62.50, basis Minneapolis.

Minneapolis: Demand slow; trend weak; supply ample; new process $48.50 bulk, August; $49.50 September; old process $57.50 bulk.

Boston: Demand and supply limited; $77.

Kansas City: Demand slow; trend steady; supply adequate although production is practically stopped; solvent meal $48, bulk, Minneapolis; old process $57.50.

Omaha: Demand slow; supply limited; 34% solvent, $54.80 bulk, Omaha basis.

Milwaukee: Demand fair; supply good; old process $69, new process $59.

Philadelphia: Demand and supply fair; 34%, $70.50.

San Francisco: Demand fair; supply ample; $69.

MALT SPROUTS

New Orleans: Demand fair; supply ample; trend steady; $41@43.50.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $45.

Milwaukee: Demand good; supply fair; odd weights $38.50, even weights $40.50.

Boston: Demand and supply very spotty; $42.50 nominal.

Chicago: Demand fair; supply adequate; No. 1 $38@38.50.

MEAT AND BONE MEAL

Portland: Demand slower; trend lower; supply ample; $2.20 unit of protein.

Ogden: Supply normal; $117.50 in 100-lb. bags.

Los Angeles: Demand good; trend steady; limited offerings; 50% protein $2.35 unit.

New Orleans: Demand good; supply adequate; trend steady; $127@129.

Wichita: Demand good; supply insufficient; 50% $130, f.o.b. plant; 55%, no quotations, no offerings.

Ft. Worth: Demand good; supply extremely light; meat and bone, 50% $120@125, f.o.b. or delvd. Ft. Worth.

Cincinnati: Demand fair; supply short; trend easy; 50% meat and bone scraps $117.50 sacked, Cincinnati.

Louisville: Demand slow; supply good; trend easy; $112.50@117.50.

Kansas City: Demand slower since feed business is reduced; trend steady to weaker; supply adequate for demand; 50% meat and bone scraps, $120 sacked.

New York: Demand good; trend steady; supply fair; 50% $97.50, 55% $107.50 bulk; 50% $100.50, 55% $110.50 sacked.

St. Paul: Demand very slow; supply ample; trend weaker; 50% meat scraps, $117@124.

Boston: Demand fair; supply adequate; $1.75 protein unit; converted 50%, $95.

St. Louis: Demand fair; trend steady; supply adequate; 50%, $118.

Chicago: Demand good; supply tight; 50% protein, $117.50@125.

Omaha: Demand slow; supply ample; 50%, $125 ton, Omaha basis.

Buffalo: Demand just fair; trend lower; supply ample; 50% meat scraps, $107.50 bulk; $112.50 sacked.

San Francisco: Demand good; supply fair; $2.25 unit of protein.

MILLFEED

Minneapolis: Demand poor to fair; trend weak; supply ample; bulk bran and midds. $25.50, sacked bran and midds. $30@31; flour midds. $40@43; red dog $44@45.

Kansas City: Demand slow; trend steady; supply sacked tight this week but ample for next; bran $29.75@30.50, shorts $33.25@34, sacked; bran $25.25@26, shorts $30@30.50, middlings $26.75@27.50, bulk.

Wichita: Demand fair; supply sufficient; basis Kansas City: Bran $30.75@31.25, shorts $34.25@34.75; bran declined $1.75 and shorts $1.25, compared with the preceding week.

Ft. Worth: Demand off; supply limited; carlots, burlaps, prompt, bran $40, gray shorts $44, delvd. Texas common points; $1 higher on bran and $1.50 higher on shorts, compared with previous week.

Chicago: Millfeed sales were slow during the week ending Aug. 20, as supplies were heavy. Prices remained fairly steady during the period. It was also thought sales would pick up with the advent of a stimulated formula feed business. Quotations: Bran $35; standard midds. $35@36, flour midds. $44@45, red dog $49.50@50.

St. Louis: Demand slow; supply ample; trend lower; sacked, bran $35.25@35.75, shorts $38.75@39.25; bulk, bran $30@30.50, shorts $35@35.50, midds. $31.50@32.

Omaha: Demand slow; supply ample; sacked bran $31, Omaha basis; sacked gray shorts, $35.50, Omaha basis; bulk standard midds. $28.50, Omaha basis.

Cincinnati: Demand fair; supply adequate; trend steady; bran $41; middlings $43.

Boston: Demand cautious; supply adequate; bran $46, middlings $47.

Buffalo: There were more sellers than buyers last week and millfeeds backed down under lack of demand. Weakness centered mostly in bulk items and the differential between sacked goods widened out on both bran and middlings. Bran $35@36.50; standard midds. $36@37; red dog $49@50. The bulk differential on bran widened out to $6 and on midds. to $5.50.

New York: Demand fair; trend easier; bran $44@44.50, standard midds. $45.50@46 sacked, New York rate points.

Philadelphia: Demand spotty; supply fair; bran $45, standard middlings $47, red dog $61.

New Orleans: Demand good; trend steady; supply sufficient; bran $42.50@43.25; shorts $46@46.75.

Louisville: Demand fair; trend stronger; supply good; bran $42.10; mixed feed $44.35; gray shorts $47.10; standard midds. $43.50.

Memphis: Demand fair; supply ample; trend steady; wheat bran $38, gray shorts $42, standard midds. $41.

Portland: Demand good; supply ample; trend higher; $42.

Ogden: Supply normal. To Utah and Idaho: Red bran and millrun, $38; midds., $43. To Denver: Red bran and millrun, $45; midds., $50. To California: Red bran and millrun, $45.50; midds., $50.50, f.o.b. San Francisco and Los Angeles.

San Francisco: Demand fair; supply ample; millfeed $45.50, red bran $46.50.

Los Angeles: Demand improved; supply limited; trend firmer; standard millrun $46@46.50; red bran $46.50@47.50.

MINERAL FEED

San Francisco: Demand steady; supply good; all purpose with iodine, $70.

Ogden: Supply average; $110 in 50-lb. blocks; $98 granular 50-lb. bags.

Portland: Demand good; supply ample; trend unchanged; $42.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags, $90, f.o.b. plant.

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½%; granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Los Angeles: Demand good; supply adequate; trend steady; $25 bulk, f.o.b. tank cars; $25.25 bulk, f.o.b. tank trucks.

New Orleans: Demand slow; supply ample; trend steady; 15¢ gal. tank cars and trucks; 600 lb. customers drums $9.62.

Ft. Worth: Demand fair; supply sufficient; blackstrap 16¢ gal., f.o.b. Houston; delvd. Ft. Worth truck $35.06 ton, seller's market price on date of shipment.

Cincinnati: Demand fair; trend steady; supply adequate; 14¼¢ gal. New Orleans.

Boston: Demand steady; supply plentiful; 18½¢ gal. in tank cars.

St. Louis: Demand slow; supply ample; trend steady; 14¼¢ gal. New Orleans.

Kansas City: Demand slow; trend steady; supply adequate; 14@14¼¢ gal., tank car, New Orleans.

Buffalo: Demand fair; trend steady; supply good; 18½¢ gal., f.o.b. Albany.

Memphis: Demand up; supply adequate; trend steady; blackstrap, 14¼¢ gal., tank car, f.o.b. New Orleans, and $30 ton delivered truck, Memphis.

San Francisco: Demand and supply good; $25, f.o.b. cars Richmond, Cal.

New York: Demand and supply good; trend steady; blackstrap 18¢ gal., tank cars, tank wagons, f.o.b. New York.

Minneapolis: Demand slow; trend steady; supply ample; 14½¢ gal. New Orleans; $34.50 ton, f.o.b. terminal.

Atlanta: Demand good; supply limited; trend steady; $22.50 bulk, f.o.b. Florida producing points, immediate.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Boston: Demand good; supply fair; white pulverized, $56; ground mixed, $45.45; reground oat feed, $20.50.

Chicago: Demand fair; supply adequate; reground oatfeed $13.50; fine ground feeding oatmeal $69; feeding rolled oats $76.

Memphis: Demand poor; supply ample;

FROM ICELAND
COD-LIVER-OIL
VITAMIN-A-STABILIZED
MIDLAND WESTERN, INC.
160 W. SPRUCE ST., READING, PA.
FROM ICELAND

FEED GRAINS
KAFIR-MILO
BARLEY - CORN - OATS - WHEAT
From Every Grain Producing Area in United States
CONTINENTAL GRAIN COMPANY

OFFICES:
New York, Chicago, Kansas City, St. Louis, Omaha, Columbus, Memphis, Norfolk, Nashville, Enid, Minneapolis, Louisville, Fort Worth, Buffalo, Toledo, Houston, Galveston, Portland, San Francisco, Vancouver, B.C., Winnipeg, Los Angeles

TERMINAL ELEVATORS:
Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

trend steady; 3¼% protein, reground oatfeed, $21.

Philadelphia: Demand slow; supply fair; pulverized white $54; Canadian oatfeed $29; domestic oatfeed $25.50.

Portland: Demand slow; supply ample; trend unchanged; rolled $62; ground $59; cleaned $63.

Los Angeles: Demand steady; supply adequate; trend stronger; pulverized, local production $58.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $42.95; reground oat millfeed 3% protein, sacked, $22.45.

Louisville: Reground $21.80; rolled oats $83.80; feeding oatmeal $76.80; pulverized white $50.30; crimped white oats $66.30.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $22; pulverized white oats $49; rolled oats $85.

Minneapolis: Weaker trend; fairly good demand, very large receipts; feeding rolled $74; pulverized $42.50; feeding oatmeal $66; reground $17; crimped $56.

OYSTER SHELL

Los Angeels: Demand and trend steady; supply adequate; $14.80.

Portland: Demand good; supply ample; trend unchanged; western $32; eastern $38; granite grits $26; shell flour $16.

New Orleans: Demand good; supply plentiful; trend steady; $14.80@15.

Louisville: Demand good; supply ample; trend steady; in 80 lb. bags, $22.85; 50 lb. bags $23.10; 25 lb. bags $25.35.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Boston: Demand and supply steady; $25.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $42.50.

Atlanta: Demand fair; supply limited; trend steady; 45%, $67.

PEAT MOSS

Boston: Demand and supply steady; $3.15 bale in carlots.

San Francisco: Demand fair; supply ample; $3.75 bale.

Chicago: Demand light; supply ample; $3.60@3.70, standard 7½ cu. ft. bale.

Philadelphia: Demand slow; supply light; $2.85 bale, f.o.b. pier.

Los Angeles: Demand and trend steady; supply adequate; Canadian 6.1 cu. ft. bales $3.85.

Portland: Demand slow; supply ample; trend unchanged; $3.25 bale.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81; 200 lb. in 100-lb. drums $1.83; 25-lb. drums $1.86, f.o.b. Cincinnati.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

POULTRY BY-PRODUCTS

Los Angeles: Demand very good; trend steady; supply limited; $2 unit of protein.

Ft. Worth: Demand good; supply very limited; 55% protein $124, f.o.b. north Texas plant.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Feed Ingredients of All Kinds
FORMULA MIXING FOR DEALERS
Excellent References

COB ABSORBENT FEED BASE
HARD WOODY RING PARTICLES REMOVED
Mixed With Molasses for Livestock Feed Will Absorb More Than 5 Times Own Weight
Bagged in 4-Ply Sewed Paper Bags
TI-CO INDUSTRIES, INC.
TIPTON, INDIANA — ELWOOD, INDIANA
P. O. BOX 185 — FEDERAL 2-5942

Boston: Demand poor; supply tight; $110.

Salisbury, Md.: Demand good; supply light; trend steady; $102, f.o.b. producers plants.

Atlanta: Demand fair; supply limited; trend steady; $116, f.o.b. Alabama and Georgia producing points, immediate.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4⅛¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand fair; trend steady; supply limited; bran, California production, high fat content, $52.

Ft. Worth: Demand fair; supply tight; carlots, rice bran nominal $29@30, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

San Francisco: Demand fair; supply ample; bran $45, Polish $49.

Atlanta: Demand fair; supply limited; trend steady; bran $43.

SCREENINGS

Chicago: Demand fair; supply adequate; ground grain screenings $30; Canadian bulk $20.

Buffalo: Demand fair; trend steady; supply good; ground $26.75, New York, L & R; unground, bulk, $22.25, New York.

Ft. Worth: Demand almost nil; supply sufficient; ground $28 nominal.

Cincinnati: Demand fair; trend steady; supply adequate; pulverized ground screenings $35, bulk, Cincinnati.

Minneapolis: Prices weak; demand extremely slow; offerings small; light $2@10; mediums $11@15; heavies $16@30; Canadian ground $20; Canadian bulk $13.50; flaxseed screenings $23; oil type flaxseed screenings $35, basis 15%.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.85@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUM

Ft. Worth: Demand fair; supply sufficient, offerings increasing; carlots, bulk, No. 2 yellow milo $2.14@2.16 delvd. Texas common points.

Los Angeles: Demand steady; trend easier; supply ample; milo $2.35 cwt. bulk.

Cincinnati: Demand fair; trend steady; supply adequate; milo $2.80 cwt.

SOYBEAN OIL MEAL

Los Angeles: Demand slow; trend weaker; supply ample; $84.50@85.50.

Ogden: Supply normal; $81@86.

Louisville: Demand dull; trend still declining; supply ample; $66.20, off $6 in past week and $21 in the past four weeks.

New Orleans: Demand fair; trend weak; supply adequate; $76@76.75.

Wichita: Demand slow; supply ample; 44% $79, 50% $80, f.o.b. Wichita.

Ft. Worth: Demand poor; supply sufficient; carlots 44% $76@77, August; truck delivery $75.

Portland: Demand slow; supply ample; trend lower; prompt $52, Decatur.

Cincinnati: Demand poor; trend lower; supply adequate; $55 bulk, Decatur.

Boston: Demand slow; supply adequate; 44%, $54; 50%, $55, both bulk, Decatur.

San Francisco: Demand fair; supply ample; $85.50.

St. Louis: Demand fair; supply ample; trend higher; 44%, $68.

Kansas City: Demand slow, although it picked up in some areas, notably Iowa, this week; trend firmer; supply ample but not pressing as earlier; meal for Kansas City and western shipment $51@54.50, bulk, Decatur, with offerings and sales reported made at several prices in the range; unrestricted meal $56@58.

Chicago: Soybean oil meal sales were brisk during the week ending Aug. 20, as buyers apparently felt the need to replenish dwindling supplies. The market was strong during the period and it was thought prices could go upward momentarily. It was believed that as long as supplies were at a low ebb, continued buying could be expected. Quotations: 44% protein soybean oil meal, unrestricted, bulk Decatur, $57@58; 50% $66.50.

Philadelphia: Demand slow; supply fair; 44%, $54, bulk Decatur.

Omaha: Demand slow; supply ample; 44% solvent, $59 bulk, delivered Omaha basis.

Memphis: Demand fair; supply plentiful; trend up; prime 44% solvent, $66, sacked, f.o.b. Memphis.

Milwaukee: Demand fair; supply good; $54, bulk Decatur.

Minneapolis: Demand good; trend slightly firmer; supply ample; $48 bulk, Decatur; $60.50 bulk, Minneapolis. 50% about $10 more.

Atlanta: Demand fair; supply limited; trend strong; 44%, $77.

TANKAGE

Kansas City: Demand slower with slack feed business; trend steady to softer; supply adequate for demand but not plentiful; 60% digester tankage $122.50.

St. Paul: Demand slow; supply ample; trend weak; 60% digester $120@124.

Omaha: Demand slow; supply ample; $127.50, Omaha basis.

Chicago: Demand fair; supply tight; 60% protein $117.50@127.50.

St. Louis: Demand fair; trend steady; supply adequate; 60% $118.

Ft. Worth: Demand fair; supply extremely light; 60% digester $122@125.

Louisville: Demand slow; trend easy; supply good; $115@120.

Wichita: Demand good; supply insufficient; 60% $130, f.o.b. plant.

New Orleans: Demand and supply good; trend steady; $135@137.

Cincinnati: Demand fair; trend easy; supply good; 60% digester $120.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.70; in 25-lb. drums $1.75, freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75, f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75, f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand good; trend strong; supply adequate; $93@95 cottons.

Chicago: Demand good; supply adequate, trend firm; $80@86.

Buffalo: Demand fair; trend steady; supply just fair; commercial grade, $76.

PURDUE

(Continued from page 8)

fed a combination of penicillin, streptomycin and sulfaquinoxaline (a total of 20 grams/ton) from 35 to 177 pounds gained 18.9% faster than the control pigs fed no additive. Arsanilic acid fed at the rate of 90 grams per ton produced a 12.1% increase in average daily gain.

A combination of aureomycin (chlortetracycline), penicillin, terramycin (oxytetracycline) and zinc bacitracin (5, 2.5, 5 and 7.5 grams of the respective antibiotics per ton) resulted in a 9.8% increase in rate of gain while pigs fed a combination of penicillin and zinc bacitracin (5 and 15 grams per ton) gained 6.8% faster than the control pigs.

Pigs which received 3-nitro-4-hydroxyphenylarsonic acid (22.5 grams per ton) showed a 3.8% increase in growth rate. Arsenobenzene (19 grams per ton) and piperazine phosphate (400 grams per ton) feeding resulted in a reduced growth rate (3.0 and 9.1% respectively). Arsanilic acid improved feed efficiency by 6.25% while the combination of antibiotics fed (aureomycin, penicillin, terramycin and zinc bacitracin) increased feed efficiency by 2.7%. Piperazine phosphate decreased feed efficiency 8.0%. Little or no effect on feed efficiency was shown by the other treatments. Arsanilic acid produced the most economical gains.

Although no data regarding the effects of these various feed additives on carcass quality were reported, all pigs will be slaughtered when they reach 210 lb. market weight and complete carcass measurements (carcass length, backfat thickness, primal and lean cut yields and loin eye area) will be taken.

TRANQUILIZERS: Results of feeding tranquilizers continuously to pigs from weaning (28 lb.) to 160 lb. were discussed by R. A. Pickett. He reported that at the levels fed, the incorporation of Hydroxyzine (1.0 gram/ton), Meprobamate (50 grams/ton), Perphenazine (1.0 gram/ton), Reserpine (120 mg/ton) or Rauwolfia vomitoria (50 grams/ton) in the ration had no significant effect on daily gain or feed efficiency of the pigs. Feed intake was not changed much by the treatments except that the pigs on Hydroxyzine ate slightly less than the controls or those on other tranquilizers.

The pigs receiving tranquilizers showed no signs of sedation or change in physiological reaction. The levels of tranquilizers used were somewhat lower than those used in humans. For example, reserpine is most effective in man at levels of .5 mg. to 1 mg. per day and the pigs on reserpine received an average of about .25 mg. per day.

Regardless of treatment, all pigs were very efficient in feed conversion, requiring only 2.7 to 2.9 lb. of feed per pound of gain and feed costs of the complete ration fed on pasture were very economical, ranging from 7½¢-8¢ lb. of gain. Further research is necessary to determine the level of tranquilizers necessary to cause a physiological effect in swine.

CORN VALUES: Dr. W. M. Beeson, in summarizing three experiments comparing the relative feeding value of low moisture shelled corn and ensiled high moisture shelled corn for growing-finishing swine, presented data to indicate that:

Eight percent or more of high moisture corn (on a moisture equivalent basis) is required per 100 lb. of gain when compared to low moisture corn. Less protein supplement is consumed when high moisture corn is compared to low moisture corn containing 11.5% moisture, but there appears to be only small differences in the protein supplement consumption when the high moisture corn is compared to low moisture corn containing 14% moisture or more.

Pigs fed the low moisture shelled corn made the most economical gains in all three experiments. However, the differences in the cost of corn and protein supplement required tended to offset each other when dried corn (11.5% moisture) was fed. Ensiling of high moisture shelled corn for swine should be considered on its merits as an efficient method of handling and storing corn since there is no improvement in the nutritional value of the corn.

SPRAYING: Dr. F. N. Andrews, animal physiologist at Purdue, discussed the effectiveness of mist-type spraying systems for cooling swine.

Data was reported from four lots of pigs that had been fed 49 days (84 to 180 lb.). Two groups were sprayed and two were non-sprayed (shade only). One sprayed and one non-sprayed group received a normal ration (ground corn and supplement) while another sprayed and non-sprayed group received a ration containing 10% added fat. The experiment was started on June 23 and the period from June 23 to July 31 was the wettest in more than fifty years. During this time, all of the swine were wet by frequent rains and there was practically no difference between the sprayed and non-sprayed lots. During the entire experimental period (49 days), from June 23 to August 11, there were no days above 90° F. and only ten days when the temperature was above 85° F.

However, Dr. Andrews found that greater differences in daily gains were obtained between sprayed and non-sprayed pigs when they were fed added fat (0.20 lb. difference) as compared to pigs fed the normal ration (0.05 lb. difference). This compares with differences of 0.20 lb. daily (1956) and 0.19 lb. daily (1957) between sprayed and non-sprayed pigs fed a normal ration. One of the objectives of cooling swine is to maintain a high feed intake and rapid growth. The pigs in the sprayed groups consistently ate more and

Brewers Dried Grains
Dried Brewers Yeast
Primary Source
The New Century Co.
3939 So. Union Ave.
Chicago 9, Ill.
Phone: Yards 7-1003

SW
FOR THE BEST IN
GRADERS
SPROUT-WALDRON
MUNCY, PENNA.

gained faster than similarly fed pigs that were non-sprayed.

SILAGE: Results of the fifth year of research on feeding silage to sows and gilts during the gestation period indicate that either corn silage properly supplemented or a nutritionally balanced and bulky self-fed ration are excellent, as well as economical, gestation rations.

Feeding corn silage to gilts during gestation reduced total feed costs 25% as compared to gilts self-fed a bulky gestation ration. But feed costs between the self-fed group and the three silage fed groups were about equal when the weight gain of the gilt is taken into consideration and net feed cost per pig at farrowing time is used to evaluate feed costs.

Gilts fed corn silage weaned an average of 7.2 pigs per litter or 74% of their pigs farrowed and the self-fed gilts also weaned 7.2 pigs per litter or 70% of their pigs farrowed. Gilts fed adequate protein (1.5 lb. daily) weaned 76% of their pigs while those fed low protein (1 lb. daily) weaned 71% of their pigs.

A year ago, (Mimeo. A. H. 210), a high incidence of scouring in the pigs from gilts fed low protein (1 lb. daily) resulted in a high mortality rate and only 52% of the pigs were weaned, but those fed adequate protein (1.5 lb. daily) weaned 70% of their pigs. In this experiment, a lower incidence as well as less severe scours occurred compared to a year ago.

Based on these and past experimental results, as well as the crude protein requirement of the gilt during gestation (.90 pound daily), corn silage should be supplemented with 1.5 pounds of a protein supplement (containing at least 35% to 38% protein) per gilt daily.

BREEDING: Dr. James A. Whatley, Jr., who is in charge of swine breeding research at Oklahoma State University discussed "Breeding Hogs for More Efficient Production of Quality Pork." He told his audience that "in the efficient production of quality pork, the three traits of primary importance are sow productivity, efficiency of gain and carcass merit."

From a genetic viewpoint, the heritability of sow productivity is low and that only 5 to 10% of the differences in single litter production by different sows seems to be heritable. In contrast, efficiency of gain has a heritability of 25 to 30%. Characteristics indicating carcass merit are among the most highly heritable traits in hogs since carcass length is about 60% heritable followed by backfat thickness and size of loin eye, which are about 40 to 50% heritable.

For the market hog producer, Dr. Whatley pointed out that from the available information it seems that some sort of systematic crossing program is advantageous, but that the crossing program itself will not necessarily improve carcass merit. Since characteristics indicating carcass merit are highly heritable, he suggested the use of good meat-type lines or breeds for producing desirable meat-type cross pigs. These meat-type lines can best be found by extensive performance testing—testing by cooperating with breed and state sponsored meat certification programs supplemented by on-the-farm testing.

ZINC NEEDS: Dr. M. P. Plumlee, animal nutritionist, related the results of experiments at Purdue on "Zinc Deficiency and Requirement for Swine." Growing pigs fed rations containing 16 to 46 p.p.m. of zinc were fed and best performance was obtained with 46 p.p.m. of zinc. As a margin of safety, it was recommended that all rations for growing swine be fortified with 50 p.p.m. of zinc.

Recommendations for adding zinc to swine rations as protection against parakeratosis were outlined. Addition of zinc to the protein concentrate is the most logical way of introducing zinc into swine rations. Since 50 p.p.m. of zinc in a complete ration is the suggested level for protection against parakeratosis it follows that protein concentrates for swine should contain 250 p.p.m. of zinc (this is equivalent to 0.5 pound of elemental zinc per ton or 0.025%).

Many trace mineral mixes, he said, contain only .5 to 1% zinc and are added at the rate of one pound per ton of complete feed or 5 lb. per ton of protein concentrate. This source, when added to a ton of complete feed, would supply only 2.5 to 5 p.p.m. of supplemental zinc. It is doubtful whether the addition of this token amount of zinc would protect pigs against parakeratosis if the diet was deficient in zinc. Therefore, if trace mineral mixes are to supply adequate levels of zinc for protection of swine against parakeratosis, they should contain 5% zinc or more, Dr. Plumlee said.

IRON DEFICIENCY: Dr. J. H. Conrad presented results of research comparing iron dextran and soil for preventing iron deficiency anemia in suckling pigs. He found that heaviest pigs at six weeks and highest hemoglobin levels at five weeks were obtained when pigs were given two iron injections and soil. One iron injection plus soil resulted in heavier pigs and higher hemoglobin levels than two iron injections, one iron injection or soil alone.

The hemoglobin level essential for maximum growth and disease resistance in the young pig is not known but in this study the pigs with the highest hemoglobin level at five weeks were also the heaviest pigs at six weeks. It was suggested that methods of preventing iron deficiency anemia in the young pigs should be used which will assure maximum hemoglobin levels.

Fulton Bag Appoints Cotton Specialists

ATLANTA, GA.—Fulton Bag & Cotton Mills has announced the addition of two specialists to its textile sales staff. They are Jay Stang, Los Angeles, who will cover the southern part of California, and C. E. Commins, who will supplement the home office sales staff in metropolitan Atlanta.

Mr. Stang has been selling textiles in New York and California for 13 years. He attended City College, N.Y., and the Philadelphia Textile Institute.

Mr. Commins has been associated with the National Cotton Council for seven years, specializing in raw cotton market research. He is a graduate of Georgia Institute of Technology.

In announcing the appointments L. O. Harris, Jr., general sales manager of the textile division, said, "These additions to our textile sales staff are part of Fulton's long range program to employ trained cotton specialists. These men can assist our industrial cotton fabric customers with their manufacturing problems."

EXPANDS MIXING FACILITIES

BUFFALO, OKLA. — Robert A. Jackson, manager of the Buffalo Farmers Cooperative Elevator Co., has announced an expansion to the firm's feed mixing facilities. He said four Butler holding bins, two Eureka 1½-ton mixers, a Ross all-steel elevator leg and weigh buggy are being added. Addition of the extra equipment will more than double capacity, Mr. Jackson said.

FARM LAW

(Continued from page 1)

port changes which Commodity Credit Corp. may find it necessary to make on such commodities as soybeans, which would compete with corn acreage. If, for example, the present level of bean support is maintained, it would be out of line with the new corn supports, and possibly be a heavy competitor with corn for land in many areas. CCC undoubtedly will be unwilling to see this condition occur and may be expected to review the bean support line for next year.

Another aspect of the bean support level for 1959 is the indicated heavy expansion of cotton acreage for 1959, which will pile up a relatively large crop of seed, adding to the over-all protein meal supply.

History of Bill

The farm bill was passed early this week when the Senate, by voice vote, accepted the House passed version of the bill and sent it forward for certain presidential approval.

The passage of the measure can only be described as a long stride in the direction of complete adoption of the Benson farm program and reluctant recognition by the shattered farm bloc in Congress that the old program, which dates back to 1933, lost its shadow and substance.

Here is the story of the aftermath which saw many Washington observers write out the bill from practical politics. The prospect of farm legislation in this session of Congress was completely dead, they reported a week ago. Yet it came back to life, as predicted in recent Feedstuffs reports.

As Congressmen faced up to debate the bill in both chambers they were unable to kill completely the old parity concept as a bench mark for price support levels. In the case of corn they did accomplish that goal, but for cotton the administration had to give way to House opposition. But it is important to note that even under that concession both chambers of Congress gave lip service to a price support level based on a percentage of the immediate three years' national average market price when they approved the concept for corn.

Late last week it appeared evident that the farm bill was speeding along a super-legislative highway with passage apparent before the weekend adjournment. The House, which had previously declined to take up a farm bill, suddenly reversed itself and adopted an amended version of its previously defeated bill.

That measure, in many respects, was more acceptable to the U.S. Department of Agriculture than the Senate bill and all evidence available indicated that the Senate would promptly concur with the measure and send it to the floor for approval, thence to the White House for signature.

Crop Production Changes

The new bill provides a change in farm crop production for cotton, rice and corn and other feed grains for 1959. It provides a basic cotton acreage minimum allotment base of 16.6 million from which those farmers who would accept this alternative may increase their proportionate acreage allotment from that base by 40%.

Cotton farms—probably the large cotton farms—will accept the lower level of support and take the 40% increase in acreage.

In the case of feed grains—corn, oats, rye, barley and grain sorghums—price support levels for next year are sharply reduced.

This new farm bill will end acreage allotments for corn and put all corn production on a common basis of the higher of 90% of the immediate previous three years' average market price or 65% of parity, whichever is the higher. USDA officials estimate that this alternative will result in the range of support mentioned above.

The bill makes no provision for mandatory price supports for other feed grains—oats, barley, rye and grain sorghums—but they say that it has been consistent USDA policy to support these crops in the past under discretionary authority which is unlikely to be discarded now—and that those crops will probably be price supported at a related price of 60% of parity adjusted to corn related feed values.

Under these circumstances USDA officials believe there will be no overall major changes in acreage of feed grain crops. What may be picked up increases in the noncommercial corn areas due to a higher level of support this year will be washed out when the cotton areas take up the available increase of cotton acreage for the larger farms. They will thus reduce corn acreage which heretofore was induced by the commercial corn area higher loan values.

It must be considered that the expansion of the commercial corn loan area resulted from removal of land from cotton acreage by allotment programs and such increases to corn acreage brought those counties under a commercial corn belt loan classification.

That incentive is now definitely removed.

Soybean Support

Another influence which is now in the making is the probability that USDA may reduce the level of price support for soybeans next year to prevent a substitution of corn acreage to beans, if the bean price support level is not reduced in line with the new price support level for corn. This year USDA officials wished to drop the soybean price support level down from the level adopted. Next year they are likely to attain their objective.

It is now clear that the farm bloc has been badly "busted" and that price supports are headed down and as in the case of corn acreage allotments are in the discard with more to follow probably.

Price supports for the other feed grains—oats, rye, barley and grain sorghums in 1959—will not be more than the 60% of parity noted above which is hardly a production incentive and probably shall return these crops to their normal historical position as on-the-farm consumption commodities.

SPORTS CORNER

Allied Tradesmen Trounce Mixers, 32-6

By DUKE KENNEDY
Acting Executive Sports Editor

SOMERSET, WIS.—(Special)—At a game played at the palatial Somerset Stadium Aug. 18, the Allied Tradesmen routed the Manufacturers, 32-6.

The game was a feature of the annual Northwest Feed Manufacturers Assn. "fun party" held here and at nearby New Richmond.

The men of Leo Levens, Allied manager, plastered the ball all over the lot and sometimes out of the lot as they scored 17 runs in the first inning. Leading the slugging attack was Vern Hastings with six hits in seven trips to the platter, including two home runs. Ken Shannon hit a grand slam home run in the fourth to put the game on ice.

The heat of battle and Old Sol were too much for veteran arbiter Harry Cowan, who threw in the sponge in the sixth. Earl Warner, Jr., took over.

At a meeting of the high commissioners of softball following the game it was decided that next year's contest would be played under slow-pitch rules. In this game the pitcher must loft the ball one foot in throwing and each team has 10 men.

ALLIED	ab	r	h	MANUFACTURERS	ab	r	h
J. Sideras, 2b	5	4	3	J. Anderson, rf	5	1	2
J. Stewart, 3b-c	7	4	5	Cotterman, 3b-lf	4	0	2
Shannon, lf	7	3	4	Beggs, lb-p	3	1	0
Hastings, c-lb	7	5	6	Kopperud, c-lf	3	1	2
D. Levens, cf	6	2	1	Kieffer, 3b-cf	3	1	1
J. Olson, p	4	2	2	Nelson, p-ss	3	1	1
L. Levens, p-ss	3	1	1	Harstead, 2b	0	0	0
Williams, 3b	7	4	5	Heinzig, 2b	3	1	1
H. Stewart, ss-p	6	3	4	Pfremmer, 2b	1	0	0
VanHoven, rf	7	4	4	Hanson, ss-lb	4	0	2
				Aldean, cf-ss	3	0	1
				Lindsley, ss	0	0	0

2B Hits—Williams; 3B hits—H. Stewart, Jim Olson; homeruns—Hastings 2, Shannon; double plays—Williams-Sideras-Hastings. WP—J. Olson. LP—Bob Nelson. Umpires—Cowan and Warner.

MICHIGAN STATE

(Continued from page 7)

corn, 20% oats and 40% oats respectively.

According to Dr. Hoefer, this study indicates that where oats are included in the swine ration, it will probably pay a farmer to use pelleted feeds.

Other Tests

In other tests, Michigan State researchers checked to see if hygromycin, a worm control type of antibiotic, has any growth stimulating properties aside from its worm controlling properties. Dr. Hoefer reported that when fed to worm-free pigs, this material did not show growth stimulating effects. Also, he reported, hygromycin fed in combination with aureomycin did not increase daily growth as much as aureomycin alone on worm-free pigs.

Research was also reported at Swine Day which showed that adding either iron or copper to conventional rations will stimulate growth. Preliminary results from this test also indicate that copper may prevent parakeratosis. The swine scientists are setting up another test immediately to check these one-time results.

Studies on antibiotics and antibiotic-sulfa drug combinations as growth stimulants show that a combination of penicillin-Streptomycin and sulfaquinoxaline at 4 lb. per ton boosted growth rate at 56 days and the increase continued throughout the test at 107 days. Pigs on lower rates of this mixture grew at a faster rate during the first 56 days but the advantage disappeared during the latter part of the experiment.

Between 25 and 40 parts per million of zinc will prevent parakeratosis in pigs on a normal calcium (.6%) ration, according to research at Michigan State. When a high calcium (.8% and up) ration is fed, about 50 parts per million are needed to prevent parakeratosis, Dr. Hoefer said.

Iron dextran is proving to be one of the best materials for controlling baby pig anemia, Dr. Hoefer said. Nutrition scientists staged a demonstration to show the visiting swine farmers how to use this new injectable material.

In a test to evaluate a second injection of iron dextran, pigs getting it were slightly heavier than control pigs. But Dr. Hoefer still feels that one injection is sufficient unless there is evidence of anemia at three weeks. Material for the first injection costs 30¢ per pig.

Integration Talk

Dr. R. C. Kramer, agricultural economist at Michigan State, told the visiting hog producers that vertical integration will not hurt the swine industry.

"Many of the forces moving the industry toward integration are healthy and will help improve the competitive position of Michigan hog producers," he declared. "Some producers may be hurt, but the industry will be helped because integration will get new technology out to farmers and get them to use it."

One of the biggest drawbacks to contract sales resulting from integration, Dr. Kramer felt, is the elimination of competitive market forces. "Without these forces, the industry may lose sight of the actual value of the commodity," he said.

"Efficient producers won't have to integrate to stay in business," Dr. Kramer believed. "But to remain competitive, they'll have to continue to put the latest technology to work as soon as it becomes available."

Dr. William Magee, animal scientist at Michigan State, pointed out to the visiting swinemen that crossbreeding has some definite advantages for the commercial hog producers. "Through intelligent selection and breeding, strong desirable characteristics of two breeds can be put together which can result in faster growth and sime improved litter size," he said. Carcass quality, however, won't necessarily be improved through crossbreeding.

Bob Maddex, agricultural engineer at the University, unveiled two new designs for modern central farrowing houses. One plan calls for farrowing stalls; the other is a combination of conventional pens and farrowing stalls.

For the first time this year, a sale of superior boars tested at the Michigan Swine Evaluation station was held. To be rated superior, boars had to gain at least 1.6 lb. per day, use less than 3.25 lb. of feed per pound of gain, have not more than 1.6 in. of backfat at 200 lb. and index at least 100.

A total of 16 boars was sold for an average of $133.24. Willard Waters, Plainwell, Mich., paid the top price of $230 for a Poland China boar owned by Howard Riley, Charlotte, Mich.

WISCONSIN

(Continued from page 6)

who has not been sold on balanced feeding," he said.

"If we will train our men to know the advantages of feeding balanced rations, and teach them to discuss this intelligently with this type of farmer, we will gain increased sales, and at the same time be doing a service to this farmer by helping him increase his profits."

Mr. Dougherty pointed out the need for Wisconsin feed men to cooperate with each other, with the university staff and with local veterinarians.

"If the spirit of cooperation continues to grow, there should be two results—our farm customers will benefit through better feeding efficiency and greater profits, and we as feed men will find increased tonnage and a more healthy business atmosphere."

Enzymes for Poultry

In his talk on enzymes as a possible way to improve poultry feed, Dr. Bird said, "Right now it appears that the only application of dietary enzymes in poultry feeds is in the area where barley is a major component of feeds. There is reason to believe, however, that in the near future, the means will be found of improving other feeds by enzyme addition."

He pointed out that it has been found recently that the addition of amylase (starch-splitting enzyme) preparations to feeds with a high content of barley improves the growth of young chicks, and that this finding stimulated interest in enzymes, which are now being tried in a variety of diets.

To point up the possible improvement of poultry feed utilization by the addition of enzymes, Dr. Bird presented a table showing the percentage of each major poultry feedstuff that is not digested. (The figures given in the table were calculated from the digestibility values given by H. W. Titus, The Scientific Feeding of Chickens, Second Edition, 1955.)

"Probably some of the nutrients that escape the chicken's digestive enzymes do so because microorganisms get to them first and use them up before the chicken has a chance. This would be especially true of protein. However, it is believed that the figures in the table give an approximate idea of the job we might hope to accomplish if we had enzymes to add to the feed which were active in the chicken's digestive tract," Dr. Bird explained. He pointed out that the total undigestible matter in the plant products listed in the table ranges from 8-46%.

INDIGESTIBLE NUTRIENTS IN POULTRY FEEDS AND INGREDIENTS

(All figures are percentages of total feedstuff)

	Undigestible protein, %	Undigestible fiber, %	Undigestible N.F.E., %	Undigestible fat, %	Total undigestible %
Broiler mash	3.9	3.6	6.5	0.6	14.6
Barley	2.9	5.4	12.1	0.7	21.1
Corn, ground	1.9	1.9	5.7	0.5	10.0
Milo	1.6	1.9	4.2	0.5	8.2
Oats	3.0	9.6	16.8	0.8	30.2
Rye	3.8	1.8	11.5	1.0	18.1
Wheat	2.5	2.2	8.4	1.0	14.1
Wheat bran	6.1	8.3	29.8	1.8	46.0
Wheat middlings, standard	4.5	7.0	18.6	1.8	31.9
Corn gluten meal	7.8	2.7	18.5	0.9	29.9
Cottonseed meal	10.7	12.5	3.8	0.5	27.5
Peanut meal	10.3	12.7	7.5	1.2	31.7
Soybean oil meal	8.8	5.8	6.5	0.7	21.8
Blood meal	8.0			0.1	
Fish meal	6.0			0.7	
Meat meal	5.5			1.0	
Meat and bone meal	5.0			1.0	
Dried skimmilk	6.5			0.1	

"Another experiment the growth and feed conversion of turkey poults were improved during the first four weeks by adding Clarase to pearled barley or ground whole barley. When the same enzyme preparation was added to corn or wheat there were small increases in growth, which were not significant.

Another researcher found that Clarase and other fungal amylase preparations improved growth of chicks and poults fed a high level of barley. In some tests a substantial improvement of corn diets was observed.

Dr. Bird said that there are two recent reports that corn-soybean meal diets were not improved by a variety of enzyme preparations. These included pepsin, pancreatin ficin, a proteolytic enzyme of fungal origin, a lipase and an amylase.

"When antibiotics were first introduced into feeds, one could improve the growth of chicks or poults by adding an antibiotic to almost any diet. With the enzymes, the situation is entirely different," Dr. Bird said. "They offer very interesting possibilities for research and application, but there are difficult problems.

"One problem is the inactivation and destruction of the enzymes in the digestive tract. Feed goes into the crop at a pH near neutrality, but it gradually becomes acid as a result of bacterial action, until the pH is about 4.5. This is acid enough to stop the action of many enzymes.

"Probably the best opportunity for enzyme action would be immediately after entrance of the feed into the crop, before acidity has developed. After passing from the crop to the gizzard, the mixture is exposed to a pH of about 2.0 and acted upon by pepsin which digests proteins.

"All digestive enzymes are proteins or are largely made up of protein. Most of them, and perhaps all except pepsin itself, would be inactivated by the acid in the gizzard and digested by the pepsin. If a dietary enzyme did survive the gizzard, it would find a more favorable opportunity for action in the small intestine where the pH range is from 5.7-6.5.

"Enzymes are destroyed by heat and by long storage. Attention will have to be given to this instability if they are to be used in feeds. Their action is not necessarily uniform and consistent even when they are used repeatedly in the same diet formula.

"A barley sample that is rained upon in the field during harvesting may undergo spontaneous enzymatic changes, and it may be so much improved thereby that an enzyme in the feed will not improve it any further.

"It has been pointed out that crude enzyme preparations may also be sources of unknown growth factors. This fact must be recognized in interpreting stimulation of growth. There appears to be no doubt that the more concentrated enzyme preparations are effective because of their enzyme content."

Reports on the other research and management addresses will appear in the next issue of Feedstuffs.

Chairmen for each of the four conference sessions were: Eldon H. Roesler, executive secretary of the CRFA; W. B. Griem, chief of the feed inspection service, Wisconsin Department of Agriculture; Prof. F. J. Giesler, University of Wisconsin department of animal husbandry, and Dr. R. P. Niedermeier, University of Wisconsin department of dairy husbandry.

Dr. Robert W. Bray acted as toastmaster at a banquet ending the first-day activities. Guest speaker was Harry Manzer, Washington National Insurance Co., Madison.

Two question-answer periods were included in the program.

Convention Program Set for GFDNA Ladies

ST. LOUIS — An interesting round of activities has been arranged for ladies attending the Grain & Feed Dealers National Assn. convention in St. Louis Sept. 7-9.

Planned are a tour of Grant's Farm, present home of August A. Busch, Jr., chief executive of Anheuser-Busch, Inc., a ride through Forest Park, luncheon at the LeChateau restaurant and a style show.

The tour of Grant's Farm will be held Sept. 8. The farm is a 281-acre estate just south of St. Louis where President Ulysses Grant lived in a log cabin. A French Renaissance house was built on the site by August Busch I. There is also a lake for waterfowl, a park for deer, antelope, buffalo, longhorn steers and mountain goats, a stable of horses and a family zoo.

Miss Ruth Moegle, chairman of the ladies hospitality committee, who is supervisor of grain purchasing for Anheuser-Busch, Inc., has made arrangements for a conducted tour of the estate.

The trip will include a ride through Forest Park, home of the St. Louis Municipal Opera, and luncheon at LeChateau restaurant. Refreshments will be served before lunch and a style show will follow the luncheon.

Every man attending the convention with his wife will be given a special ticket for all of the ladies' activities when he registers with her. The ticket does not include the banquet Monday evening.

Ladies are invited to the banquet, however, and also to the open house and reception to be held Sept. 9 at the new headquarters building of the St. Louis Merchants Exchange.

NEW STORAGE ADDITION

ARGYLE, MINN. — A 24,000-bu. warehouse and storage addition for the Cooperative Warehouse Assn. here has been completed. It will be used for storage of feed and fertilizer.

MARKETS

(Continued from page 2)

dients has been on an extremely slow basis although most purchasing agents are frank to admit that they are not covered on their September requirements, and sellers generally agree that there will probably be a wave of buying to come into the feed ingredient market in the near future. This could lend strength to prices and cause a corresponding shortage of supplies between now and the time that new crop material is available.

Although this section is expected to have a bumper crop of corn, there has been some concern this week over the possibility that wet weather has caused the corn crop to be all stalk, with ears not filling out properly. Total supplies may not be what has been estimated.

More cottonseed oil mills are starting almost daily and new crop supplies of cottonseed meal and hulls are now available for immediate ship-

ment in the southernmost sections of the territory. Trading has been held to a minimum with asking prices by sellers considerably above buyers' ideas. Practically no forward shipment business has been reported and very little interest is displayed since most buyers expect prices to be at least as low as were available last year, and some expect even lower prices to prevail during the peak of the fall movement.

Central States

Another week of much slower sales was chalked up by formula feed manufacturers this week. The month of August is lagging behind the months of June and July in sales, most mills report, as prices continued to decline during the period. It was thought that when ingredient prices stabilized somewhat, further buying could be expected.

Mill representatives also said that inventories are getting down again to the point where replenishments of stocks soon will be necessary. Hog feed sales were still fairly good. Other feeds were slower and dairy feeds are having a hard time getting off the ground due to lush pastures in and arcund the area.

Most mills are working a five day week, with order backlogs virtually nil as mills operate on a day-to-day basis.

Ohio Valley

Some decline was reported this week in the record volume of formula feed sales that has prevailed throughout most of this year. Market observers have attributed the business fall-off to current ample supplies of farm feeds, overstocking by many retailers at the time the Middle East crisis developed and the widespread belief that feed prices will decline during the weeks ahead.

Manufacturers, however, had been anticipating the seasonal business decline, and several said it would have developed some weeks earlier had not the heavy and almost continuous rains prevented turning farm animals into the lush pastures.

It is generally believed that more active buying will be resumed within a month or so, as farmers begin speeding up the fattening of poultry, hogs and cattle for fall and winter marketing. Considered a favorable factor was a government report this week that storage supplies of red meats are now 27% below average, while cases of eggs in storage are the smallest on record and reserves of butter and cheese also are at lower levels.

With supplies of virtually all ingredients reported ample this week, area manufacturers are having no difficulty in filling orders promptly. Most mills are operating on straight five-day schedules, with no third-shift or overtime operations.

South Central

Little change was noted in the rate of feed sales this week. Demand is well down from its peak and is likely to remain so for awhile, according to mill representatives. A general feeling persists that the downturn is only temporary and a reversal is in the making.

A good proportion of the drop in sales was showing up in hog feeds. The reduction in concentrate deliveries during the last several weeks has been quite sharp.

Although egg mash sales have held quite steady, a rush of heavy hens to market this week probably will result in reduced deliveries. Market observers said that mounting death losses caused by the season's first prolonged hot and humid weather is forcing a quick reduction in farm flocks and big increases in market receipts of heavy hens.

Little improvement in cattle and dairy feed sales can be looked for as long as farmers can take advantage of exceptional pasture conditions.

Many of the mills found it difficult to work out a full week's run.

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Abbott Laboratories
Academic Press, Inc.
Aeroglide Corporation 76
Agricon, Inc.
Agri-Tech, Inc.
Agri-Tec Steel Corp.
Alabama Flour Mills
Albers Milling Co.
Albumina Supply Co., Inc. 70
Allied Chemical Corporation, Nitrogen Division
Allied Mills, Inc.
Amburgo Co., Inc.
American Agri. Chemical Co. 52
American Cyanamid Co. 36, 37
American Dehydrators Assn.
American Elev. & Grain Div.
American Mill Serv. Co.
American Poultry & Hatchery Fed.
Anchor Serum Co.
Anderson Box Co.
Andersons, The
Anderson, V. D., Co. 42
Andrews Machine Co.
Arbor Acres Farm 60
Archer-Daniels-Midland Co.
Arkansas Rice Growers Coop. Assn.
Arkell & Smiths
Armour & Co. 34
Aubrey Feed Mills 60

Babcock Poultry Farms
Baker, H. J., & Bro.
Baker, J. T., Chem. Co.
Barnard & Leas Mfg. Co., Inc. 66
Baroid Division, National Lead Co.
Bartlett, C. O., & Snow Co. 80
Barton Salt Co., The 44
Bates Grain Co.
Baughman Mfg. Co., Inc.
Baxter, A. E., Engineering Co.
Beardstown Mills
Bemis Bro. Bag Co. 9
Berg, Paul
Bigelow Sales Co.
Black, Sivalls & Bryson, Inc.
Blatchford Calf Meal Co. 64
Blomfield-Swanson
Borden Company 65
Bosworth Commission Co.
Bowman Feed Prod., Inc. 35
Bradley & Baker
Bremco Alfalfa Mills, Inc.
Brewers Yeast Council, Inc.
Brower Manufacturing Co., 75, 78
Brown, Fred G., Pulv. Co.
Bruce Milling Co.
Bryant Engineering Co.
Burlap Council, The
Burrell, James H., & Co., Inc.
Burrows Equipment Co. 85
Burrus Feed Mills
Butler Chemical Co. 55
Butler Mfg. Co. 64

C-K Processing Co.
Calcium Carbonate Co.
California Pellet Mill Co.
Caple, A. B., Co.
Carey Grain Corp.
Cargill, Inc. 30
Carson Food Co.
Chambers, John C., Co.
Champion Portable Mill Co.
Chantland Mfg. Co. 44
Chase Bag Co. 16
Checkerboard Grain Co. 81
Chemo Puro Mfg. Corp.
Chicago Feed Ingredient Co.
Citrus Processors Assn.
Cleveland Vibrator Co., The 67
Clinton Corn Processing Co.
Clofine, Herbert K. 28
Colby Milling, Inc. 61
Collier Livestock-Feeder Co.
Colonial Poultry Farms
Columbia Phosphate Co. 59
Columbia Quarry Co. 42
Columbian Steel Tank Co.
Commercial Solvents Corp. 12, 13
Consolidated Blenders, Inc. 57
Consumers Soybean Mills
Continental Grain Co. 89
Corn Products Sales Co. 66
Coronet Phosphate Co. 45
Crete Mills 11
Cromwell Paper Co.
Crown Zellerbach Corp.
Cummings Schooler Co.

D. C. A. & Co. 66
Daffin Mfg. Co. 56
Dannen Mills, Inc. 62
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc. 71
Day Company, The
Daycom, Inc. 67
Delaware Poultry Laboratories
Devold, Peder, Oil Co. 51
Diamond V Mills, Inc.
Distillation Products Industries 39
Distillers Feed Research Council
Doane Agricultural Serv., Inc.
Doane Feed Products Co.
Dorsey Trailers 11
Doty Laboratories
Douglas Chemical Co.
Dow Chemical Co.
Duplex Mill & Mfg. Co. 69
Du Pont de Nemours & Co., Inc., E. I. 22, 23

Early & Daniel Co. 83
Eastman Chemical Prod., Inc. 68
Ehrsam, J. B., & Sons Mfg. Co., The
Elam Grain Co.
Entolater Division, Safety Industries, Inc.
Eriez Mfg. Co.
Eschenheimer, Rudy, Co.
Eshelman, John W., & Sons
Ewing, Ray, Co. 63

Farm Journal
Farmers Mutual Hail Ins. Co. of Iowa
Feed Service Corp.
Fischbein, Dave, Co.
Flavor Corp. of America 33
Flour Mills of America
Food Mach. & Chem. Corp.
Forster Mfg. Co.
Fox Co. 72
Fox Valley Milk Feeds, Inc.
Fruen Milling Co. 7

Gaddis Bros. Mfg. Co.
Geerlings Feed Mills
Glidden Co., The
Gold Kist Peanut Growers
Gorton-Pew Fisheries 90
Grace Chemical Co.
Grain Processing Corp. 77
Grand River Chem.
Griffith Labs., Inc. 54
Gump, B. F., Co. 14

Hales & Hunter Co.
Hallet & Carey Co.
Hand, Peter, Foundation 3
Hardy, H. E., & Co.
Hardy Salt Co.
Harris-Crane, Inc.
Harshaw Chemical Co.
Hawthorne Co.
Hayes and Stolz
Haynie Menhaden Prod., Inc. 59
Heard-Kinard-Smith Inc. 60
Heck, Edward J., & Sons Co.
Heil Co., The
Helm Manufacturing Co.
Henderson Mfg. Co.
Henke Mfg. Co.
H. Hentz & Co.
Hercules Powder Co.
Hess & Clark, Inc.
Heterochemical Corp. 29
Highway Equipment Co. 81
Hilltop Laboratories
Hoffman-Taff, Inc. 85
Hogenson Const. Co.
Hogg, N. D., Ltd. 40
Holt Products Co.
Homer Mfg. Co., Inc., The
Honeggers' & Co. 38
Honeymead Products Co.
Hot Spot Detector
Howes, S., Co., Inc.
Hubbard Milling Co.
Hubbell, Charles H.
Hygeno Litter Co.
Hy-Line Poultry Farms

Ibberson, T. E., Co. 83
Illinois Soy Products Co. 69
Indian Jute Mills Assn.
Industrial Commodity Corp.
Industrial Molasses Corp.
International Machinery Dev. Corp.
International Minerals & Chemical Corp. 17
International Paper Co. 46
International Salt Co., Inc.
Iowa Limestone Co.
Iowa Portable Mill Co. 51

Jackson, Gilbert, Co., Inc.
Jacobson Machine Works 54
James Mfg. Co.
Jersee Co. 44
Johns-Manville 24
Jones-Hettelsater Const. Co.

Kalo Co.
Kansas Soya Prod. Co., Inc.
Kees & Company 44
Kellogg, Spencer, & Sons, Inc. 51
Kem Mfg. Co.
Kemp, C. M., Mfg. Co.
Kent Feeds
Kent, Percy, Bag Co., Inc.
Key Alfalfa Dehydrators 79
Keystone Steel & Wire Co.
Kilby Steel 85
Kindstrom-Schmoll Co.
Koelsch, Charles J., Grain Co.
Koppers Co., Inc.
Kraft Bag Corp. 61
Kraft Foods Co.
Kuss, R. L., & Co., Inc.

Laboratory Construction Co.
LaBudde Feed & Grain Co. 23
Land O'Lakes Creameries, Inc.
Landers Mill Mfg. Co.
Lathrop's Hatchery, Inc. 52
Lauhoff Grain Co. 30
Leach Mfg. Co. 80
Leffwich, J. H., & Co., Inc. 22
LeGear, Dr., Inc.
Lennox Industries, Inc.
Levens Mfg. Co.
Lilly, Eli, & Co. 20, 21
Lima Armature Works 84
Limestone Products Corp. of America 33
Linck, O. E., Co., Inc.
Loncala Phosphate Co.
Longhorn Eng. Co.

M-G-R Feed Co., Inc.
McCabe Grain Co., Ltd.
McCall, Tom, & Associates, Inc.
McClelland, M. A.
McMillen Feed Mills
Magnus, Mabee & Reynard
Maney Bros. Mill & Elev. Co. 90
Marco Chemical Co. 56
Marienis, C. J., Grain Co.
Martin, Theo. W., & Son
Mathews Co. 40
Mayo Shell Corp. 35
Melos Mfg. Co.
Merchants Chemical Co., Inc.
Merck & Co. 31, 32
Mid-Continent Grain Co. 46
Midland Western 89
Midwest Alfalfa Co.
Mid-West Business Exchange 84
Midwest Dried Milk Co.
Millbrew Co.
Mill & Elevator Co.
Miller Manufacturing Co.
Miller Publishing Co., The
Milligan & Son
Minneapolis Sewing Mach. Co. 30
Minnesota Linseed Oil Co 29
Minnesota Specialty Co., Inc.
Monsanto Chemical Co.
Morse Boulger Destructor Co.
Motomco, Inc.
Morton Salt Co. 47
Murphy Products Co.
Myers-Sherman Co. 38

Nagel, Herman, Co. 61
Natl. Alfalfa Dehydrating & Mfg. Co. 94
Natl. Cottonseed Prod. Assn., Inc.
Natl. Distillers Prod. Co.
National Lead Co.
National Molasses Co. 40
National Oats Co.
National Renderers Assn. 53
National Turkey Federation Underwriters
National Vitamin Products Co.
Nellis Feed Co. 70
New Century Co., The 90
New England By-Prod. Corp. 90
Nichols, Incorporated
Nootbaar, H. V., & Co.
Nopco Chemical Co. 78
North American Dodgen Co.
North American Trading & Import Co.
North Carolina Granite Corp.
North East Feed Mill Co.
Northwest Brewers Yeast, Inc.
Nor-Vell, Inc.
Nutrena Mills, Inc. 30
Nutri-Lab Mixing Corp.

Oakes Mfg. Co.
Olavarria & Co., Inc.
Omega Machine Co., Div. of B-I-F Industries, Inc.
Oyster Shell Corp. 81
Oyster Shell Prod. Co. 74

Pabst Brewing Co.
Panagen, Inc.
Paper-Calmenson & Co. 23
Park, Philip R., Inc.
Parks, J. P., Co. 7
Parrish & Heimbecker
Parrish, N. K.
Paxton Processing 85
Pay Way Feed Mills, Inc.
Peavey, F. H., & Co. 52
Peerless Equip. Co., Inc.
Penick, S. B., & Co.
Permco Mfg. Co.
Pfizer, Chas., & Co. 48, 49, 50
Phelps Dodge Refining Corp.
Pillsbury Mills, Inc.
Pittsburgh Plate Glass Co.
Pless & Sheahan 52
Prater Pulverizer Co. 85
Pratt Labs., Inc.
Productive Acres Mfg. Co. 52
Publicker Industries, Inc. 15

Quaker Oats Co.

Ralston Purina Co.
Ranger Equipment Co.
Rapids Machinery Co. 29
Raymond Bag Corporation 73
Read, Gladwin A., Co.
Rees Blow Pipe Mfg. Co.
Red River Alfalfa Co.
Red Star Yeast & Prod. Co.
Reliance Feed Co.
Rhodia, Inc.
Richardson, James, & Sons
Richardson Scale Co.
Riley Feed Co.
Rion Crush Stone Corp.
Ripco, Inc.
River Rest Turkey Sales, Inc.
Robinson Conveyor Systems
Rohloff Bros., Inc. 28
Rolfes Grain Aeration Co. 74
Roskamp Huller Mfg. Co., Inc.
Rosner-Hixson Laboratories
Ross Machine & Mill Supply
Ruttger's Minnesota Lodges
Ryde & Co.

St. Regis Paper Co.
Safety Industries, Inc.
Salsbury's, Dr., Labs. 26, 27
Save-Way Feed Mills
Scanlan, Ivan, & Co.
Schenley Distillers, Inc.
Schipke, Henry, & Assoc.
Schuster-Wise Gr. & Feed Co.
Schutte Pulverizer Co., Inc.
Scroggins Grain Co. 81
Seagram, Joseph E., & Sons, Inc.
Seco, Inc. 35
Sedberry, J. B., Inc. 42, 84
Seedburo Equipment Co. 16, 70, 85
Sheahan, Robert F. 52
Shellbuilder Co. 70
Shell Chemical Co.
Sievert, C. W., & Associates 56
Simonsen Mfg. Co. 62
Small, The W. J., Co. 5
Smith, Edward E., & Co. 24
Soft Phosphate Research Inst.
Soluble Nutrients, Inc. 67
Southwest Mill Supply Co.
Sparks-Waters-Farnen, Inc.
Special Products, Inc.
Specifide, Inc.
Spencer Kellogg & Sons, Inc. 51
Springer Pub. Co.
Sprout, Waldron & Co., Inc. 7
24, 30, 40, 51, 52, 72, 82, 85, 90
Squibb, E. R., & Sons
Stabilized Vitamins, Inc.
Staley, A. E., Mfg. Co.
Staley Milling Co.
Standard Brands, Inc. 46, 54, 60, 68
Standard Feed & Fert., Inc.
Stauffer Chemical Co.
Stephens-Adamson Mfg. Co.
Sterwin Chemicals, Inc.
Stone Mountain Grit Co.
Strong-Scott Mfg. Co. 59
Sudenga Industries
Sunset Feed & Grain Co. 33
Superior Feed Co.
Swanson, Carroll, Sales Co.
Swift & Co.
Synthe Lab.

T. D. F. Company
Tamms Industries
Taste Engineering, Inc.
Texas Mill Equipment Co.
Thayer Scale Corp. 28
Thomer Equipment Co.
Thompson Printing Co. 66
Ti-Co Industries 90
Tobias Enterprises 54
Toxite Laboratories
Truck Grain Blower Co.

Ultra-Life Laboratories, Inc. 59
Union Bag-Camp Paper Corp.
Union Special Machine Co.
U. S. Industrial Chem. Co. 41
Universal Hoist Co.
Upjohn Company, The

Van Camp Lab.
Van Dusen Harrington Co. 52
Vantress, Chas., Farms, Inc.
Van Waters & Rogers, Inc.
Vineland Laboratories, Inc. 83
Vitamins, Inc. 43
Vitaway, Inc.
Vitren Corp.

Vy Lactos Laboratories, Inc. 72
W-W Grinder Corporation
Wallace & Tiernan, Inc.
Warren-Douglas Chemical Co.
Weller, S. T., Co.
Wells, Ralph, & Co. 60
Wenger Mixer Mfg. Co. 62
Wertz Feed Co. 5
Western Condensing Co. 24
Western Yeast Co. 67
West Virginia Pulp & Paper Co. 75
White Laboratories, Inc. 25
White Shell Corp. 72
Whitmoyer Laboratories, Inc.
Whitten Co.
Wilhoit Laboratory 29
Wilson & Co., Inc.
Wilson, R. S., Co.
Wirthmore Feeds
Wisconsin Alumni Research Foundation
Woodington Elev.
Woodward & Dickerson, Inc.

Younglove Construction Co. 68
Young, John F., Co.

Zellers' Laboratories

Pacific Northwest

Feed ingredient markets ruled mixed under varying supply and demand conditions. While there was further deterioration to pastures and low range feed conditions which stimulated supplemental feeding, the availability of new crop feed grains and hand-to-mouth buying of principal ingredients were somewhat of an offsetting factor.

Formula feed sales were fully maintained, however consumers were not purchasing for inventory purposes due to the weakness in some important ingredients. Soybean meal prices continued to drop off and were around $20 ton below four or five weeks ago, but were still slightly above the same date last season.

Easier markets on feed barley, corn and meat meal were also reflected in the cautious buying policy. Wheat millfeed prices continued to advance, gaining $1@2 ton the past week. Trading remained extremely thin, due to scarce offerings and light interest. Mill capacity was down considerably and as a result all millfeed supplies were being applied on earlier export bookings to Japan.

Broiler and turkey feeds continued to move at a steady pace and dairy feed sales showed further expansion as a result of reduced pasture and range feed.

Fish meal markets continued firm with limited offerings of Canadian herring meal due to poor fishing conditions. Imported Peruvian fish meal was offered at $2.32½ unit of protein f.o.b. dock Portland.

Meat and bone meal prices broke for the first time in several months, dropping $2.50 ton this week.

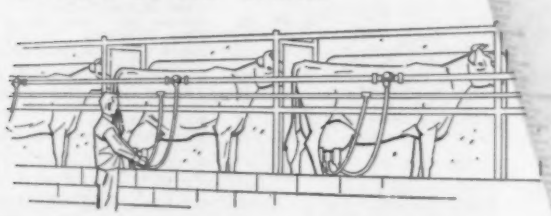
Alfalfa hay markets tended to the firmer side as third crop supplies sold at premiums of $1@2 ton. Local dairy feeders provided better interest in this crop, apparently anticipating forward needs. At the same time, a larger movement of Washington alfalfa hay was marked for shipment to points in Canada where hay supplies are short due to the prolonged dry, hot weather conditions.

will your feed performance measure up

IN BETTER POULTRY PIGMENTATION?

IN MORE EFFICIENT PORK GAINS?

IN GREATER BEEF GAINS?



IN IMPROVING DAIRY RESULTS?

...or...are you still using yesterday's formulas?

Recent developments and new discoveries have outdated yesterday's feed formulas. Look your formulas over! Will the performance of your feeds measure up to today's high standards?

One major development in the feed industry this past year was the new high standard for dehydrated alfalfa set by National's Hi-N. Acceptance of Hi-N by many of the nation's foremost feed manufacturers has been wide-spread. Nearly 30% of National's carload shipments last year were of premium quality dehydrated alfalfa.

Be sure the performance of your feeds measures up to today's standards. Include Hi-N, nature's perfect premix, in your formulas.

Hi-N

the premium alfalfa product with

MORE VITAMIN A 125,000 I.U.'S/lb. • **LESS FIBRE** 23% MAX. • **MORE PROTEIN** 18% MIN. • **ALFALFA FACTOR/S** HIGHER LEVELS

FIBRE ASSAYS furnished on all Hi-N and 20% Broiler-Layer Meal shipments

Write for our New Hi-N Specification Folder

WORLD'S LARGEST NATIONAL ALFALFA DEHYDRATORS

ALFALFA DEHYDRATING & MILLING CO.

BOARD OF TRADE BUILDING • KANSAS CITY, MO.

WORLD'S FOREMOST DEHYDRATORS